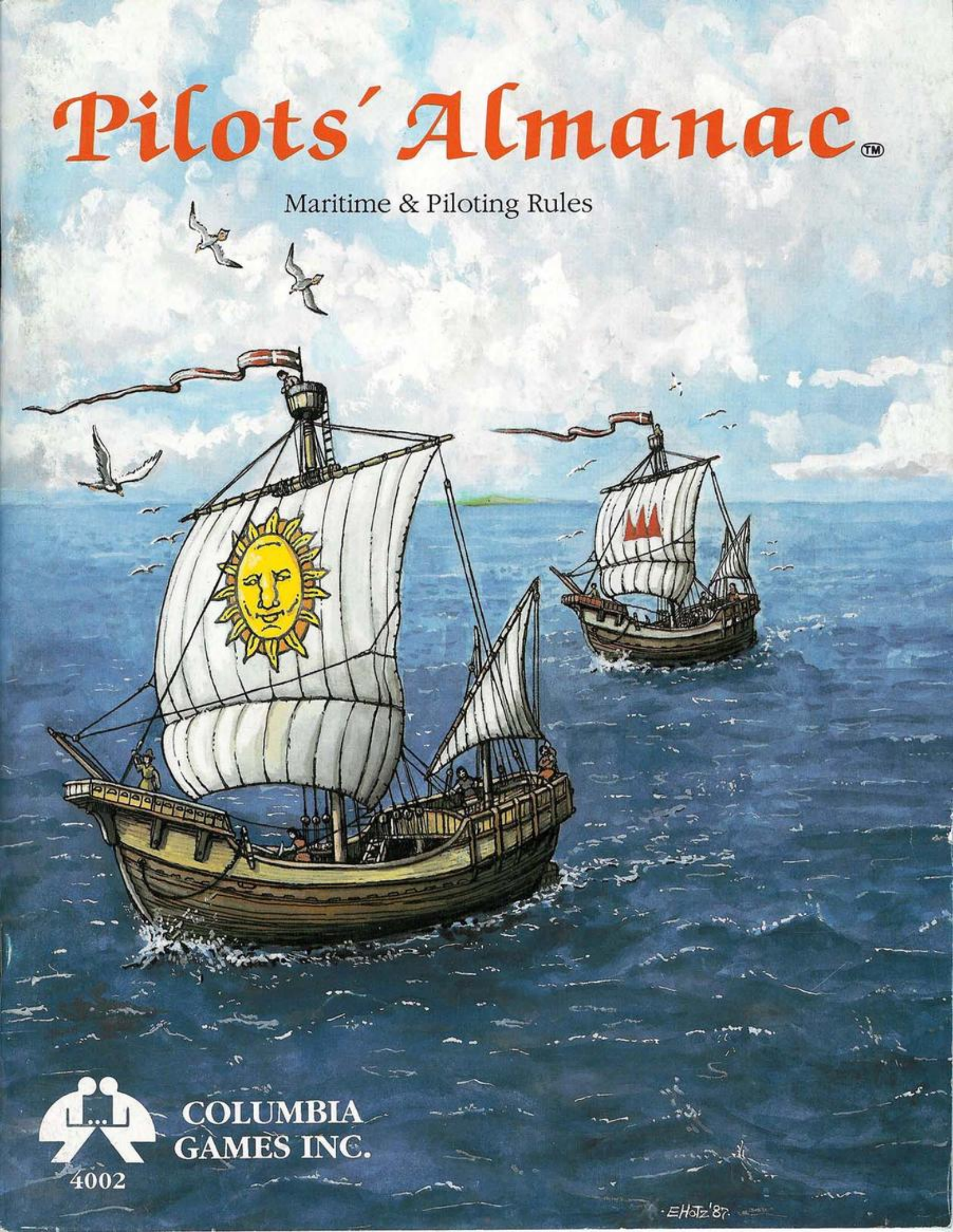
Pilots' Almanac™

Maritime & Piloting Rules



COLUMBIA GAMES INC.

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Pilots' Almanac™

Maritime & Piloting Rules

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INTRODUCTION

THE PILOTS' ALMANAC

With this module, it becomes possible for PCs to go to sea and follow a career as pilot, pirate, or maritime trader. Of course, the distinctions between these occupations may be academic, since many PCs will dabble in all three.

These rules are designed for ***Harnmaster,*** but they are easily converted to other systems. About all that will be necessary is to convert the skill system we use to your own system. Better yet, convert to ***Harnmaster;*** you will not regret it.

THE PILOT CHARACTER

The vocation of pilot is a perfect career for roleplaying. It provides an excellent and natural rationale for travel, exploration, and adventure. In our experience, one of the most enjoyable elements of piloting is exploration, but if players already know the geography this element is lost. Therefore, the four maps in this module should not be examined by players unless the GM deems this desirable.

The 5mm blank hex sheet included is intended for pilot charts. Two sheets cover the area of one regional map and may be photocopied for personal use. At GM discretion, pilots begin play with some charts which are partially mapped, and some data for a rutter, reflecting knowledge and experience they have gained during their apprenticeship. Be careful -- too much knowledge at the start will destroy the mystery and fun of being a pilot.

The best way to begin is to have the PC employed on a vessel whose captain (the GM) is seeking a new pilot. After one or two voyages between known ports, a commission to explore and open up new trade routes will keep the interest high. Eventually, the PC will (hopefully) have earned enough money to buy his own vessel, or to persuade a usurer to finance this purchase.

At this point, characters will soon dream up all kinds of adventure for themselves without any help from the GM. Perhaps they will want to open up new trade routes to eastern Lythia, discover the New World (Kamerand), get involved in military adventures and/or piracy, or simply try to amass great wealth by astute trading. A veteran pilot will eventually have charts for several different regions, and together with his rutter, he will slowly generate an impressive body of knowledge.

Of course, along the way, there will be numerous opportunities for adventure. GMs shouldn't need much inspiration, but try to imagine the fun of roleplaying scenarios loosely based on *Robinson Crusoe, Treasure Island, Moby Dick, Two Years Before the Mast,* and *Mutiny on the Bounty*.

CONTENTS

As with most materials we have published for Harn, this book is organized into articles which are individually numbered. The articles are:

Pilot

The Pilots' Guild, information on the Vessel Profile, and navigation and sailing rules.

Crew

The Seamans' Guild, maritime ranks and jobs, crewing a vessel, and handling the Crew List.

Shipwright

The Shipwrights' Guild, shipyards, details and illustrations of vessels, and rules for shipbuilding.

Maritime Trade

Information on filling out a cargo manifest, and rules for handling maritime trade and cargoes.

Port Almanac

A data base for about 400 ports, listing shipwright facilities, Pilots' and Seamans' guildhalls, port fees, market size, loading facilities and costs, and tides.

CHARTS

This module also contains four charts. These are reductions of four regional maps: Harn, Ivinia, Shorkyne, and Trierzon.

PILOTS' GUILD

A pilot is a skilled navigator who directs ships from one port to another. While the ship's captain decides the ultimate destination, it is the pilot who actually navigates the vessel. He decides how much sail to hoist, calculates the vessel's position and plots the courses to be steered.

All sea-going vessels over 30 feet in length are required by laws enacted in most realms to carry master pilots. Ivinian states are exceptions, and fishing vessels operating to and from their ports of registry are also exempt. Master pilots are members of the powerful and well-organized Pilots' Guild which is worldwide in scope.

Pilots are highly respected by all mariners. It is acknowledged that their skills are essential for the safe operation of a vessel. It is almost universally taboo to harm them because they are simply much too vital for maritime trade. Even pirates are likely to spare the life of a captured pilot, partly from respect, although the fact the Pilots' Guild offers a ransom of 1200d may also be a consideration.

Master Pilots

Pilots are an independent breed, introspective and conservative by nature. These are traits that serve them well in their chosen profession, but because pilots do not belong to the same guild as most other men aboard, they are somewhat aloof. Pilots are highly respected by all aboard, but rarely loved.

For these reasons it is rare for the pilot to be the vessel captain, unless he also owns the vessel. Most pilots are bonded-masters and they are well paid, often earning more than the captain. Wages range from 8-12d per day, although most pilots forego regular wages in favour of a share of each cargo. These are handsome wages, especially considering the fact that room and board, and other generous benefits such as liberty chest privileges are also proferred. A good pilot can become quite wealthy. Some have risen from humble beginnings to own a fleet of six or more vessels, but rough seas and shipwreck claim the lives of many before they retire.

Pilot Skills

Master pilots should be fully generated if they are to be around for any length of time, The attributes they possess should be weighted towards giving a high skill base (generally at least 12) in maritime skills. The following skills would be typical: Piloting/80, Seamanship/60, Cartography/60, Weatherlore/60, Fishing/40, Mathematics/40, Shipwright/40, and one Script/85. Most would also have one or two weapon skills, most likely Dagger/70, and Shortsword/60. Many also have a craft such as woodcarving or drawing to while away the quiet hours.

Rutters

Every master pilot compiles a private rutter, a compendium of maps, charts, facts, experiences and heresay, his accumulated knowledge of the sea. A rutter is extremely valuable, often the most valuable single item aboard, representing years of piloting knowledge and experience. Pilots often trade in information and most would pay handsomely for a quick glance at a collegue's tome, but stealing or damaging another's rutter are grounds for expulsion from the guild. The rutters of retiring or deceased pilots have been known to fetch prices of 10,000d or more. A pilot will jealously guard his rutter and may encrypt its contents to preserve secrecy. The Pilots' Guild has persuaded most civil authorities to treat the unauthorized possession of a rutter as a capital crime, but their high value is an enormous temptation to thieves. The Pilots' Guild offers rewards for the return of lost rutter.s.

Apprentice Pilots

Master pilots have wide discretionary powers with regard to taking on apprentices. Most apprentices are former seamen who have demonstrated an aptitude for learning. Apprenticeship generally takes nine years, the longest of any guild. There is no journeyman rank in the guild.

Apprentice pilots are not paid. They generally receive modest gifts and pocket money from their masters and are entitled to free room and board, and a share in booty and liberty chest privilege at the vessel's expense. Nearly all pilots have one apprentice (this is usually a condition of employment) and some wealthy pilots have two.

An apprentice pilot must serve under at least three different masters during his training, a policy required by the guild to give him as wide an experience as possible. Most pilots oblige by having arrangements with two or three other masters to switch apprentices at regular intervals. The larger guildhalls have "colleges" where apprentices can receive theoretical training while a vessel is in port. To become a master pilot, an apprentice must have the written approval of at least three masters he has served under, each for a minimum of two years, and must pass a difficult oral test administered by guild officers. This test is given at any of the larger guildhalls by appointment.

Pilot Player-Characters

A player character pilot should begin his career in the last year of his apprenticeship or as a newly qualified master pilot. The occupational skills he will possess are noted in ***Harnmaster*** (Skills 4) and he will also have five option points to develop these skills. Swimming is not listed as an occupational skill. because only about half of all seafarers can swim. It may, of course, be opened as an optional skill.

PILOT 2

VESSEL PROFILE

A profile should be filled out for any vessel on which PCs serve. Enter the vessel's name, general type, port of registry and registry expiration date. The Shipwright article contains data on pre-designed vessels, or a custom vessel may be built using the shipbuilding rules.

HISTORY

This section is used to record the port where the vessel was built, the shipwright/yard that built her, and the dates she was started, launched, and commissioned (handed over to the buyer). There is also space to record her **Total Mandays** and **Total Cost** to build, and her **Repair Factor,** which is Gross Burthen divided by 100, with minimum of 1.

DIMENSIONS

Length: the overall length in feet of the hull from stem to stern at main deck level. Projections such as a bowsprit or ram are not included in this length.

Beam: the maximum width of the hull in feet.

Depth: the depth of the hull in feet amidships, from main deck level to keel.

Draft: the average draft (loaded) is roughly 60% of depth. The draft of a vessel in fresh water increases by about 5%, but this may be ignored at GM discretion. Note draft (depth x 0.6) and round up.

Freeboard: Depth minus Draft.

Masts The number of masts on the vessel (a bowsprit is not included).

Height: The height of the tallest mast above the waterline at average draft. The standard is Beam x 3. The sloping yard of venyn-rigged vessels is higher, but may be ignored because the yard can be lowered.

BURTHEN

The Gross Burthen of the vessel measured in tuns (volume tons). The tunnage available for cargo (Net Burthen) is reduced by the space allocated to crew, provisions, and stores. These factors are explained on Shipwright 8/10.

CREW

VCF is a general rating of how many men are required to operate a vessel at normal efficiency in one watch. It is defined and explained on Crew 7. For long voyages, a vessel will need roughly twice her VCF so that duties can be rotated among two watches. The amount of crew actually carried is always at the captain's discretion.

WATCH RATINGS

Duties aboard are rotated among two watches, the Port Watch and Starboard Watch. Each watch has three ratings and its cumulative fatigue is also recorded (see Crew 7).

PILOT/CHIPPY

Enter the Piloting MLs of all pilots, and the Shipwright MLs of all chippies (ship's carpenters) aboard.

PROVISIONS

Enter the daily consumption (ie. the total number of persons aboard). Deduct this amount each day from the total number of mandays currently aboard.

HULL FACTOR

The basic strength of the vessel's hull, any damage thereto, and the current (effective) strength.

TIGHTNESS

Tightness is the vessel's ability to resist Flooding. Tightness can be reduced, especially when the hull is damaged, increasing the chances of flooding. Record Basic Tightness, Damage, and Current Tightness.

FLOODING

Vessels can ship water as a result of weather and grounding damage, and it can be removed as a pumping/bailing crew routine. Flooding is measured in Flooding Points. All vessels (regardless of size) can hold two FPs in their bilges before damage to cargo is likely, and **ten** FPs before they founder. The current flooding of a vessel is recorded in this space.

RIGGING

A number expressing the quality and strength of a vessel's masts, yards, shrouds, stays, and sails. As with HF, the basic RF may decrease as a result of damage.

Sail Quarters: The amount of sail a vessel can hoist is divided into quarters; four quarters is full sail, two quarters is half sail, and so on. To establish a vessel's sail quarters, divide the basic RF by five (5). Under SQ1 enter this number, under SQ2, enter twice this number, under SQ3 enter three times this number, and under SQ4 enter four times this number. Hence, a vessel with an RF of 80, would have ratings of 16, 32, 48 and 64. (See Pilot 5 for details).

SAILING FACTORS

Sailing Grade: There are three general classes (1) Square, (2) Mixed, and (3) Venyn. Within each general class are five grades identified by a letter, A (best) to E (worst). Fill in the Sailing Grade (Square/D for example). The ratings for **Beat, Haul,** and **Run** are defined on Piloting 8/9.

OAR FACTORS

Oar Grade: The efficiency under oar, assuming a full complement of oarsmen (See Crew 7). This rating is also measured from A to E., but may differ from sailing grade.

Oar MPs the number of movement points the vessel has when rowing. See Piloting 9.

EQUIPMENT

Record the number of **Spares** (materials for shipboard repairs), **Pindas** (ship's boats), **Anchors,** and miscellaneous equipment carried. Repairs at sea can not be made unless the vessel has spares to expend. Captains may carry as many spares, pindas, and anchors as they wish, but each takes up tunnage which will be deducted from Gross Burthen in the Burthen section. See Crew 8 and Shipwright 10.

VESSEL PROFILE

VESSEL NAME	
VESSEL TYPE	PORT OF REGISTRY / EXPIRY DATE

History

PORT BUILT	
SHIPWRIGHT	
DATE OF LAYING KEEL	
DATE LAUNCHED	
DATE OF COMMISSION	
TOTAL MANDAYS	VESSEL COST
REPAIR FACTOR	

Dimensions

LENGTH
BEAM
DEPTH
DRAFT
FREEBOARD
MASTS
HEIGHT

Cabins

CABIN 1
CABIN 2
CABIN 3
CABIN 4
CABIN 5
CABIN 6
TOTAL CABINS

Burthen

GROSS BURTHEN
CREW QUARTERS
PROVISIONS/LOCKERS
SPARES/STOREROOMS
OTHER
OTHER
NET BURTHEN

Crew

VCF
SAILING CREW
OTHER CREW
TOTAL COMPLIMENT

Port Watch

SEAMANSHIP
SHIPWRIGHT
HAZARD RATING
FATIGUE

Starboard Watch

SEAMANSHIP
SHIPWRIGHT
HAZARD RATING
FATIGUE

Pilot/Chippy

PILOT
APPRENTICE
CHIPPY
CHIPPY'S MATE

Provisions

DAILY CONSUMPTION
PROVISIONS ABOARD

Hull Factor

BASIC
DAMAGE
CURRENT

Tightness

BASIC
DAMAGE
CURRENT

Rigging

BASIC	
DAMAGE	
CURRENT	
SQ1	SQ3
SQ2	SQ4

Sailing Factors

SAILING GRADE		STEERING
BEAT MPs	HAUL MPs	RUN MPs

Oar Factors

OAR GRADE	OARSMEN	OAR MPs

Equipment

SPARES
ANCHORS
PINDA
OTHER
OTHER
OTHER
OTHER

Flooding

Notes

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PILOT 4

PILOTING ROUTINE

The routine below should be followed each watch at sea. If a voyage ends or begins during a watch, the GM may ignore steps that do not seem necessary. Mention is made of various piloting and hazard tables throughout these routines. These can be found in the centre of this book; detach them for reference. The following is a brief overview of the routine.

[1] WEATHER GENERATION
The GM generates the weather for the watch with the weather table provided and advises the pilot of the result.

[2] PILOT OPTION
The pilot decides how much sail he will deploy for the watch, or if he will use oars instead, or perhaps anchor the vessel.

[3] WEATHER HAZARD ROLL
If a gale or storm has been generated, a weather hazard roll is made by the pilot. The option taken in [2] above will influence the risk. If necessary, vessel damage rolls are made immediately.

[4] ENCOUNTER GENERATION
The GM (secretly) makes an encounter roll on the table provided. The time when a generated encounter will occur is also determined. The routine is interrupted to resolve the encounter at this time.

[5] MOVEMENT

[5a] Course Declaration
The pilot declares the courses and distances he will sail or row this watch, if any.

[5b] Navigational Error
The GM generates a navigational error for the watch, if any.

[5c] Plot True Course
The GM plots the true course of the vessel, and advises the pilot of any landfalls as they occur..

[5d] Grounding Roll (if any)
If the vessel has entered a river, reef, or coastal hex, the pilot makes a grounding roll to determine if the vessel runs aground. If the vessel does run aground, rolls are then made to determine damage to the vessel.

[6] ASTRONOMICAL SIGHT
If this is the 1st, 3rd, or 5th watch, the pilot may attempt to determine his latitude by taking a sight.

[7] CREW ROUTINES
The crew may now attempt routines such as bailing/pumping, repairing vessel damage, etc. These routines are discussed beginning on CREW 9.

[1] WEATHER GENERATION

The GM generates a weather report with the weather table provided. The weather depicted on this table is valid for all four regions included with this module, except for the extreme north of Ivinia and southern Trierzon The weather tables in our **Ivinia** and **Trierzon** regional modules have specific tables for these climate zones.

WINDFORCE

Windforce has major impact on sailing speed, weather hazards, and other routines. It is a gauge of the mean windspeed during the watch, measured on the Lythian pilot's scale:

(0) Calm	0+	leagues/hour
(1) Light	3+	leagues/hour
(2) Steady	7+	leagues/hour
(3) Gale	13+	leagues/hour
(4) Storm	22+	leagues/hour

The weather table gives windforce as a three number range such as 0-2 or 2-4. Where in this range (low, mid, or high) the windforce lies may be estimated by the GM, or a supplementary 1d6 roll may be made on the following table:

Locale	Low	Mid	High
Inland Water	1-3	4-5	6
Sheltered Water	1-2	3-4	5-6
Open Sea	1	2-3	4-6

Inland Water: Any river or small lake.

Sheltered Water: A large lake, sheltered bay, or leeward coast. A sheltered bay may not offer protection from all wind directions, perhaps being exposed to NW winds. A leeward coast implies the vessel is in a coastal hex on the lee side of a landmass, such as the south coast of an island in a north wind.

Regardless of location, fog/mist conditions presume a windforce at the low end of the scale.

Local Winds

The weather table generates the winds of cyclonic weather systems, biased towards prevailing winds. The GM may wish to modify these for local winds at his discretion. The most notable variation would be onshore (day) and offshore (night) breezes.

WEATHER FORECASTING

Most pilots have some ability to forecast the weather with their *Weatherlore* skill. Characters may attempt to predict the weather for future watches, and if successful, the GM must predetermine the weather as indicated on the **Weatherlore Table** and inform the character of the result.

[2] PILOT OPTION

SAIL DEPLOYMENT

The pilot declares the number of *Sail Quarters **(SQs)*** to deploy. This will determine the number of *Movement Points **(MPs)*** at his disposal for this watch. It may also determine the risk he is taking as noted under Weather Hazard [3]. Four quarters of sail is full sail, two quarters is half sail, and so on.

MAXIMUM SAIL QUARTERS

The maximum number of SQs that can be deployed is limited by the condition of the rigging. Each 20% of damage to the rigging reduces the SQs that can be deployed by one. To hoist full sail (4SQ), *Current Rigging Factor **(CRF)*** must be at least 80% of *Basic Rigging Factor **(BRF).*** To hoist 3SQ, CRF must be at least 60% of BRF. To hoist 2SQ, CRF must be at least 40% of BRF. To hoist 1SQ, CRF must be at least 20% of BRF. If CRF is less than 20% of BRF, no sail may be deployed.

EXAMPLE: *the good ship **Silverfish** has a BRF of 85; this means her SQ "breaks" are 17, 34, 51, and 68. She has accumulated 29 points of rigging damage. Consequently her CRF is 56, which is less than her 4SQ break (68) but more than her 3SQ (51). This means that she can deploy up to three quarter sail. With another six points of rigging damage, her CRF would be 50, giving a maximum of half sail.*

SAILING MOVEMENT POINTS (MPs)

Sailing MPs available this watch are determined from the **Movement Point Table.** Cross-index SQs deployed with the windforce. Hence, a vessel with three SQs deployed at windforce 2, has 6 MPs available this watch. MPs are expended at varying rates depending on the courses steered and sailing grade of the vessel, explained in Movement [5a].

OAR DEPLOYMENT

Rowing has a relatively minor role in strategic movement. Vessels capable of oared movement can ***never*** row and sail at the same time. This is because vessels heel to leeward under sail (making it difficult to use oars), and because oarsmen interfere with the efficiency of a sailing crew's duties (and vice-versa).

MPs received for rowing are noted on the **Movement Point Table** under Oar. The MPs gained are dependent on weather conditions because higher winds mean rougher seas and therefore less efficiency when rowing. The MP cost to row one hex is given under Movement [5a].

Pressing the Oarsmen

The captain may *press* his oarsmen. This increases the Oar MPs by 50%, but means that the oarsmen cannot row at all next watch.

ANCHOR DEPLOYMENT

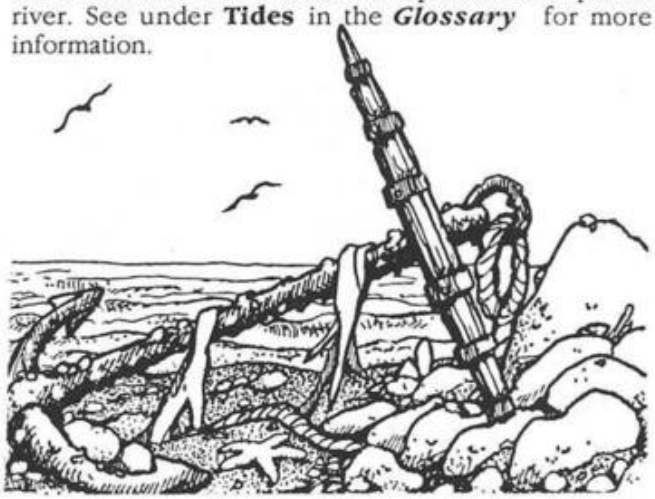
Instead of hoisting sail (perhaps none can be hoisted) the pilot may announce his intention to deploy a **sea anchor** or **bottom anchor.** A sea anchor may be used in any depth of water and is often used to ride out a gale/storm, or if the pilot wishes to maintain his position at sea for a watch or two. A bottom anchor may only be used in relatively shallow water (less than 30 fathoms). Both anchors have the the effect of keeping the vessel's head to wind (the safest direction in high seas/winds) thus reducing the danger of swamping. A line is given **[A]** on the **Movement Point Table** to indicate the weather hazard modifier applicable.

RIVER/OCEAN CURRENTS

Currents are assessed in terms of *MPs.* and the value is added/subtracted to the total available MPs for the watch. Hence a vessel with 8MPs for the watch, moving upstream against a 2MP current, would receive only 6MPs for the watch, but when moving downstream she would have 10MPs. In some cases, a vessel might actually move upstream and downstream in a watch. In such cases, the GM must adjust the effect of currents at his discretion.

River currents vary from month to month because of seasonal runoff. They must be set case by case at GM discretion. 1-3 MPs would be a reasonably navigable river, 4-6 MPs would imply a fairly swift current, and more than this would make upstream navigation difficult or impossible for most vessels. Rivers tend to be slower near their mouths, and faster near their sources or in narrow channels.

Tidal Currents: for 5-7 hexes upstream of the mouth, tides would also affect river currents. A reasonable assessment would be +2MP on the ebb, and -2MP on the flood. Hence, a river rated at 3MP would actually flow 5MP on the full ebb, and 1 MP on the full flood. The current in a slow river (1MP) might actually flow *upriver* 1MP when the tide is flooding. Obviously the effect varies with the distance upstream and specific river. See under **Tides** in the ***Glossary*** for more information.



[3] WEATHER HAZARD

The **Weather Hazard Table** is used in the event of a *Gale/3* or *Storm/4* to determine any adverse effects of high winds and seas. A 1d100 roll is made on this table against the duty watch's Hazard Rating, modified as noted below, to determine the effect.

Weather Hazard Modifier

Hoisting too much sail, or no sail, in hard weather can be dangerous. Under the Gale/Storm columns on the **Movement Point Table**, a second number is given. This is a penalty that is applied to the Hazard Rating when a Weather Hazard roll is made. Hence, hoisting full sail in a gale gives a result of 9/50; the first number is the MPs received, the second number is the Weather Hazard modifier.

Oar Effect

Vessels capable of being rowed receive no MPs for rowing in a gale/storm. However, because they can use their oars to keep their head to wind, they have a low weather hazard penalty This advantage may only be taken when the vessel has no sail hoisted, and has deployed her oars.

Anchoring Effect

Note that deploying a sea or bottom anchor gives the lowest weather hazard penalty, zero in the case of a gale, and five in the case of a storm.

Flooding Modifier

A vessel with water sloshing around inside the hull is unstable and is therefore more vulnerable to storm damage. Penalty is *Flooding* times five.

WEATHER HAZARD TABLE

Cross-index the success level attained on the roll with the windforce. The codes given are: [H] Hull Roll, [R] Rigging Roll, [F] Flooding, [C] Crew Injury/Loss, and [L] Leeward Drift. These results are *immediately* executed in the order given (left to right). Except for Leeward Drift (below) the results are explained under **[5e] Vessel Disasters.**

Leeward Drift

In a **gale,** an L result generates a 50% chance of Leeward Drift; in a **storm** it is automatic. Leeward drift causes the vessel to move one hex downwind during normal movement. If the vessel drifts on to a coast or reef, a *Grounding Roll* is necessary.

[4] MARITIME ENCOUNTERS

Encounter rolls are made secretly by the GM. There is a basic 10%, chance of an encounter in any watch, but this may be increased for busy waterways, and decreased for inactive waterways. For example, a sea-lane between two major ports, such as from Cherafir to Berema, would justify an increase to 15-20%, as would movement on the River Thard. Conversely, an encounter on the River Farin or Haonic Ocean is less likely and this would justify a decrease to 5%. If an encounter is generated, a second roll is made to determine whether another encounter occurs, and so on. There is no limit to the number of encounters in a given watch.

TIME OF ENCOUNTER

For each encounter, the GM determines the time of the event by rolling ***1d8-1*** for the number of bells (half-hours) into the watch and ***1d30-1*** for the number of minutes. When the GM estimates that the moment for an encounter has arrived during the watch, he breaks action to announce it to the pilot.

TYPE OF ENCOUNTER

The nature/identity of each encounter is generated at the time it actually occurs. This is necessary because the Environ may have changed since the beginning of the watch. The **Maritime Encounter Table** has columns for *River, Coast,* or *Open* environs. The river environ includes narrow waterways such as fjords. The coast environ implies the vessel is in or is adjacent to a coast hex. Explanations of some of the results follow:

Land Encounter

The nature of such encounters may be generated with the appropriate encounter table(s) in ***Harnmaster***, The individual/group encountered will be on the shore and may interact with the vessel. Possible land encounters include tribesmen or grounded pirates trying to flag down, or swim out to the vessel, an opportunity to obtain fresh meat, castaways in need of rescue, etc.

Mutiny/Dissent/Argument

Seamen are not known for their placid and cooperative natures. This event may indicate anything from a full blown mutiny to the mysterious disappearance of a crewman, or some other kind of unsolved crime. The type of event should depend on the relationship between captain and crew, the environ, and crew morale. Mutiny is more likely to occur if the crew has been over-worked, or ill-fed, or ill-treated. But most events on well run ships should be disputes between crewmen, a breach of discipline, a theft, or even a murder. As supreme judicial authority, the captain must investigate, try, and punish all crimes. A reputation for harsh or overlax judgements may effect crew morale.

Maelstrom/Tidal Bore/etc.

This can be a whirlpool where two currents meet or any sudden freak current which requires an additional grounding roll.

Squall/Freak Wind/etc.

A sudden gust of wind that forces an immediate Weather Hazard roll, modified at GM discretion.

Fire on Board

Fires are one of the most feared disasters that can occur on ships. See *Crew 8* .

Equipment Failure

Anything from tangled rigging causing a partial loss of movement points, to jamming or destruction of the rudder or steering board making the vessel *dumb* for all or part of the watch.

Food/Water Spoilage

Discovery of spoiled provisions. Food may have been rotted when it was brought aboard, or improperly stowed, or contaminated by shipboard pests, salt water, or rot. Effect is determined on the **Provisions Damage Table.**

Disease/Scurvy/etc.

A disease such as dysentery, malaria, or possibly scurvy has afflicted one or more crewmen. See Crew 5 for details. Apply GM discretion.

[5] MOVEMENT

A vessel expends her available movement points depending on her *Sailing Grade* and her *Point of Sailing*. The pilot maps where he thinks he is on his chart; the GM plots where the vessel really is on his chart. The difference in location (if any) depends on a random determination of navigational error.

A vessel at sea is presumed to be in the centre of a hex. There are exceptions which may apply at GM discretion. If, for example, there is land at the centre of the hex it may be assumed that the vessel is located at whatever hospitable point is nearest to the centre of the hex, or at some point declared by the pilot.

[5a] COURSE DECLARATION

Ultimately, the pilot may declare any course he deems appropriate, provided the GM agrees the declaration is reasonable. But to try and keep the mechanics playable, three basic course options are recommended: (1) Straight Line Course, (2) Dog-Leg Course, and (3) One Hex Course. The option taken by the pilot will depend on the situation.

Straight Line Course

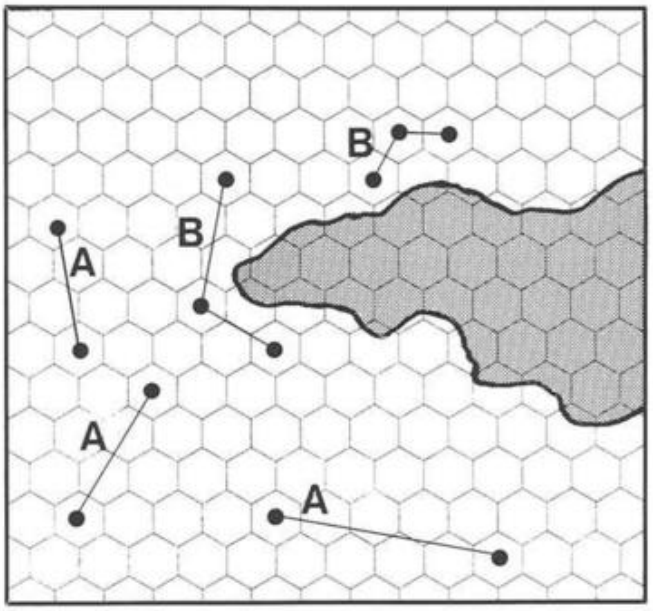
This option is used in open sea when the pilot intends to steer the same course throughout the watch. The pilot declares his entire move for the watch and announces his destination hex (in relation to his staring hex). For example, the pilot declares a straight-line course to the destination hex *"N by N by NE"*. The total *MP* cost to make the move is calculated *as if* the vessel were moving two hexes north and then one hex northeast, but the vessel's steered course is actually a *straight line* from the center of the *starting hex* to the center of the *destination hex*.

Dog-Leg Course

This option is used when the pilot intends to alter course during the watch, perhaps to round a known hazard. In effect the pilot splits his available *MPs* for the watch into two or more short, straight line courses, as with *"SW by S, and then SE"*. A straight line course would first be plotted to the first destination hex SW by S. From there, another straight line course would be plotted to the second destination hex SE. It is important that the two courses be plotted separately, and not as one straight line course.

One Hex Course

The pilot is cautious or intends to steer a variety of courses, one hex at a time, until all MPs are used up. This option is mandatory when navigating river or coastal hexes, but may be used (pilot discretion) at any time.



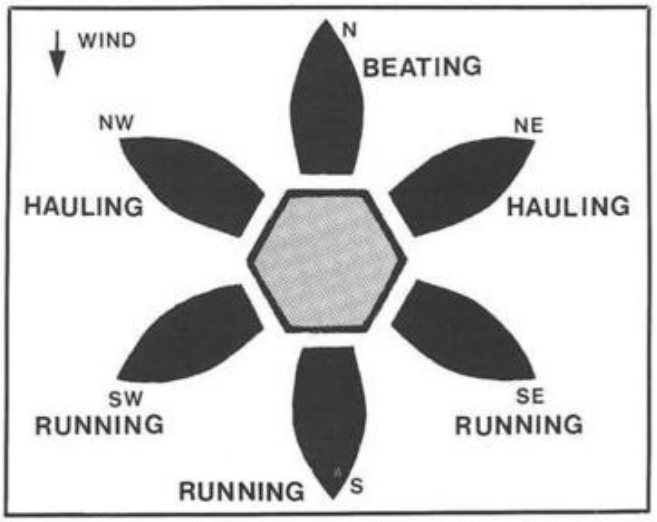
[A] Straight-Line Courses
[B] Dog-Leg Courses

No Movement

The pilot is not obliged to move. Often remaining in place, deploying a sea-anchor or bottom anchor is the best or only option. If the pilot remains in place, and has not deployed an anchor, Leeward Drift or Navigational Error may still occur at GM discretion.

POINTS OF SAILING

A vessel's *Point of Sailing* is her course relative to the wind. These rules recognize three Points of Sailing: **Run, Haul,** and **Beat.** Assuming a wind from the North, a vessel is *Running* when she steers SE, S, or SW, *Hauling* when she steers NE or NW, and *Beating* when she steers N.



Note: vessels can not actually sail directly into the wind. Beating implies the vessel is actually sailing a series of short Hauling tacks to windward.

Limits on Beating

Vessels may not **Beat** on rivers; they may sail only by Hauling and Running. If the wind is unfavorable, a vessel will have to anchor for a watch, or row or kedge upstream. At GM discretion, this restriction may hold true for all narrow waterways, such as canals, fjords, and narrow straits.

MP Cost to Sail

The **Sailing Grade Table** gives the number of MPs to sail one hex. Cross-index the vessel sailing grade (A to E) with rigging type (square, mixed, venyn) to find three numbers. The first number is the *Run* cost, the second the *Haul* cost and the third is the *Beat* cost. Hence, a *Mixed-C* vessel expends 4MPs to *Run*, 8MPs to *Haul*, and 14MPs to *Beat*. These numbers may be recorded on the Vessel Profile for reference.

MP Cost to Row

The right column of the **Sailing Grade Table** gives the number of MPs to row *one hex in any direction* for a specific Oar Grade. A vessel may not row and sail in the same watch. The *Oar Grade* of a vessel may be modified up or down at GM discretion when she has more or less than her required oarsmen aboard.

Leftover Movement Points

It will often arise that a pilot has leftover MPs. which are insufficient to move in a desired direction. Surplus MPs cannot be saved for future use, but the pilot may move a *final* hex in any watch, provided the leftover MPs are at least 50% of the required number.

EXAMPLE: *The good ship* ***Silverfish*** *has hoisted full sail in a steady/2 wind from the north. The Movement Point Table indicates she has* ***8MPs*** *available this watch. The pilot decides to steer a straight line course to the destination hex SE by SE by NE. This vessel's sailing grade is* ***Square B*** *hence her MP costs are Run (2), Haul (8), and Beat (15). The vessel is* ***Running*** *when she moves SE, hence both hexes expend 4MPs, leaving 4MPs. The NE direction is* ***Hauling*** *and this requires 8MPs, but the move is allowed because the 4MPs remaining are (at least) 50% of the necessary MPs. The same vessel could, of course, have* ***run*** *for four hexes, or* ***beat*** *one hex, etc.*

[5b] NAVIGATIONAL ERROR

Navigational Error represents the inability of a pilot to determine his exact position in the absence of good landmarks, and the inability of a crew to always carry out his orders without error.

A Navigational Error Roll is made *after* the pilot has declared his course, but is *only* necessary when the vessel is out of sight of good landmarks for the entire watch. (See: Landfalls below). GM discretion rules what constitutes a good landmark and whether or not it is in view; a navigational error may still be justified, even though the vessel is technically in sight of land, especially when navigating in unfamiliar waters.

Coastal and River Navigation

Navigational Error rolls are *not* made when a vessel is navigating along a coast or river. There are (usually) sufficient landmarks to avoid such rolls. However, as noted under **[5d]**, Grounding Rolls are made for each such hex entered.

Navigational Error Roll

The Navigational Error Roll can be made by the pilot because he will not know its effect. The roll is made against *Navigational Error EML* , which is the vessel's *Hazard Rating* modified according to (1) cloud cover, (2) navigational aid (if any), and (3) windforce. These modifiers are found on the **Navigational Error Table;** use the modifier under *None* if no navigational aid is used. Cross-index any navigational aid available (only **one** may be counted) with the cloud cover, and adjust the number given by the windforce modifier.

Once the *Navigational Error EML* is calculated, the roll is made against it. If CS/MS is generated, there is **no** error, but for MF/CF, the GM (secretly) rolls 1d10 for MF, or 1d8 for CF. If the roll is less than 7, an error of **one hex** occurs in the direction indicated by the die roll:

1/N 2/NE 3/SE 4/S 5/SW 6/NW

EXAMPLE: *the pilot rolls MF on his Navigational Error Roll. The GM now (secretly) rolls 1d10. Assuming a roll of 5, an error of one hex SW has been made. Any roll over seven (7) indicates that no error, will occur, but the pilot does not know this.*

[5c] TRUE COURSE

Both pilot and GM plot on their own charts A vessel's true course and position are plotted by the GM; the pilot can only plot his assumed position.

Until a Navigational Error occurs, the pilot's assumed course/position will be the same as the vessel's true course/position. If a navigational error occurs, the GM must allow for it by adjusting the pilot's destination hex, one hex in the direction of the error. Hence, assuming a pilot had set a straight line course of N by NW, but a navigational error of one hex SE was generated, the true destination of the vessel would be the hex N by NW by SE of the starting hex. A line drawn between the starting hex and the true destination hex is the *true course*.

Note: if the pilot is sailing a Dog-Leg or Hex by Hex Courses, any navigational error can be vectored into the first leg, the final leg, or averaged over all legs in the watch at GM discretion.

INTERRUPTIONS

The GM checks the *True Course* to see if the vessel will make a landfall, or enter *any* hex containing land or reefs. An interruption in the routine can also occur for a scheduled encounter.

Delays

The time of interruption should be set by the GM because interruptions often involve delays. For example, resolving an encounter may take hours or even extend into ensuing watched. The GM can allow for any delay by penalizing any (remaining) MPs for this, and possibly later, watch(es).

Resuming after an Interruption

Once an interruption is dealt with, and assuming the pilot has MPs remaining to move, he has the option to maintain his original course, or to declare a new course. The GM must estimate the number of MPs the pilot has remaining for this watch, allowing for distance/time travelled up to the point of interruption and any deductions for delays, etc. The following is a discussion of Encounter, Landfall, and Grounding interruptions.

Encounters

When an encounter is scheduled, the GM should estimate where the vessel will be when it occurs and interrupt the action as necessary. The nature of the encounter may be determined as soon as the GM knows where the vessel is at the appointed time.

Landfalls

If the GM determines that the vessel's true course will bring it within sight of land, he must determine when this will occur during the watch, and then interrupt the action to announce *"Land Ho"*. The general direction of the land (port bow, etc.) and a *rough* description of its nature should also be given.

The range at which a landfall may occur depends on the height of the observer (lookout), the height of the feature, and the current visibility. The **Horizon Table** may be used by the GM as necessary. On a *clear* day, and assuming a lookout at 50 feet above sea level, a coast 250 feet high would be visible at 10 leagues (two hexes), large breakers on a reef at 3 leagues, and another vessel at sea of similar height at 6 leagues. A 2500' peak, on the other hand, could be seen as far away as 26 leagues (9 hexes). Of course, at this distance the mountain would look like a low island on the horizon, and may actually be well inland of a coast that is not yet visible.

The horizon table may also be used to determine the horizon of an observer on a 1000 foot peak, and how far he could see (for example) another 1000 foot peak. Reading the table as eye 1000, the horizon (object 0) from atop the peak is 14 leagues. From this height, another 1000' peak is theoretically visible from the **sum** of both horizons, that is 28 leagues.

Grounding

When a vessel's true course enters any hex containing coast or reef, action must be interrupted for a Grounding Roll. Because a grounding roll is required for every hex when navigating on rivers or through coastal hexes, the interruptions in such environs will be numerous. Grounding is discussed in detail on the next page.

Mapping

Exploring and mapping uncharted waters will be a major activity for most pilots. The difficulty arises as to what a pilot can see in sufficient detail to map.

During hours of daylight[1] it may be assumed that land in any adjacent hex can be seen, provided the visibility is clear. When raining or snowing, it will only be visible in the same hex, and not even then when foggy. At GM discretion, the rough lay of all visible land may be given to the pilot, but precise mapping of a coastline and details on vegetation and beaches can only be determined in the **same** hex as the vessel. The pilot's cartography skill may, at GM discretion, modify these guidelines.

During hours of darkness land cannot be mapped. Land in the same hex may be visible under a bright moon, but the detail is too vague for mapping.

1. For a quick, easy guideline: Day watches are from 0800 to 2000. At GM discretion, this may be adjusted to 0800-1600 in winter, and 0400 to 2000 in summer.

[5d] GROUNDING

A *Grounding Roll* is made to determine whether the vessel runs aground and/or sustains damage.

Coasts: shorelines, especially those unknown to the pilot, are fraught with hidden dangers. For each hex moved along a coast, or if the vessel's true course enters any coastal hex, a grounding roll is made.

Rivers: these narrow waterways are notorious for shifting sandbars and other hazards. For each hex moved on a river, a grounding roll is required.

Reefs: these are obvious hazards to shipping. A grounding roll is required when a vessel's true course enters any hex containing a reef.

Grounding Roll

Grounding Rolls are made against *effective* Hazard Rating (EHR). The minimum EHR is 05, and the maximum is 95. Some or all of the following modifiers may apply.to Hazard Rating.

[1] Dumb Vessel

A vessel with no sail or oars (and unable to anchor) must trust to luck. Reduce EHR to 25 and modify only as noted under Leeward Hazard.

[2] Pilot Option

Whenever a Grounding roll is required, the pilot must select one of the following three options:

Ignore: The pilot maintains his course and speed unchanged. The GM should penalize EHR based on the amount of sail deployed and risk involved. Assess a penalty of 5 per sail quarter deployed, but this may be reduced if the vessel's true course does not actually intersect the hazard. Obviously, ignoring a reef or coast directly ahead is an automatic grounding.

Cautious: This option is only available if the pilot has deployed one quarter sail or is rowing and not pressing his oarsmen. The pilot attempts to (cautiously) steer around or through the hazard. A pilot seeking to explore a coast, navigate a reef, or enter/leave a port or river should take this option. Modifier to EHR could range from -20 for navigating a reef, to +20 for navigating into a deepwater port or river, assessed at GM discretion.

Anchor: The pilot drops sail, brings the vessel head to wind, and deploys a sea-anchor or bottom anchor. A grounding roll is still made at +20 for a sea anchor, and +40 for bottom anchor, plus/minus any other applicable modifiers. Assuming the vessel does not run aground, it has successfully anchored. This option terminates movement for the watch.

[3] Leeward Hazard

A hazard to leeward of a vessel in a gale/storm is a pilot's nightmare. If the wind is driving the vessel onto the hazard, a penalty of 10 applies in a gale, and 20 in a storm. A similar *bonus* applies if the wind is driving the vessel away from the hazard.

[4] Vessel Draft

The draft of a vessel is significant. If draft exceeds six feet, -5 per foot; if less than six feet, +5 per foot. That is, a vessel with a draft of 8 feet has a penalty of 10; one with a draft of 3 feet has a bonus of 15.

[5] Visibility

It is much harder to avoid a hazard that cannot be seen until the last instant. The modifiers may be cumulative.

Night	-20 (moonless)	-10 (bright moon)
Rain/Snow	-10 (steady)	-05 (showers)
Fog	-40 (dense)	-10 (mist)

A moonless night is defined as any night from the 25th of a month to the 5th of the next month, or any night when the sky is overcast. A bright moon implies clear/cloudy nights on the 10th to 20th of a month; other phases of the moon at -15. Rain modifier includes sleet and hail. A beacon may reduce night hazard, but see **Wreckers** in Glossary.

[6] Flooding

A vessel with a lot of inboard water is difficult to handle. Reduce EHR by flooding points times five.

[7] Familiarity

If the pilot has already mapped this hazard he is less likely to succumb to its dangers, +20 to EHR. If the local pilot/harbourmaster is aboard, +40 to EHR.

[8] Anchored Vessels

When a vessel remains at anchor throughout a watch, there is still a chance she may *drag* her anchor and run aground. A normal grounding roll is made each watch at EHR+40 when anchored.

AGROUND

MF/CF on a grounding roll means the vessel has run aground. She must immediately make **one** Hull, Flooding, Rigging and Crew Injury roll, as explained under **[5e] Vessel Disasters.** With MF on a grounding roll, the vessel is **not** stuck aground, but all movement this watch is terminated. With CF on a Grounding roll, the vessel is stuck aground and may not move again until refloated. An attempt can be made to **refloat** the vessel at the *end* of any watch (including the watch she ran aground) as noted on Crew 8. Additional damage rolls are made at the *beginning* of every watch the vessel remains aground.

[5e] VESSEL DISASTERS

The various effects of grounding and weather hazard rolls are given below. These involve a roll (disaster roll) to determine how much damage accrues to the vessel, crew, etc. Each type of disaster roll is identified by a letter code (H, F, R, C) on the Weather Hazard Table.

[H] Hull Damage

Roll 1d100 against *current* Hull Factor. Cross-index success level and hazard type on the **Hull Damage Table** and generate damage to the Tightness (T) and/or Hull Factor (H) by rolling the number of d6 indicated. Hence a vessel grounding on a reef, which rolls MF for Hull Damage, receives 4d6 points of damage to her Tightness and 2d6 points of damage to her Hull Factor.

[F] Flooding Roll

Roll 1d100 against current Tightness. Success level is interpreted on **Flooding Roll Table.** When cumulative flooding exceeds two units, the bilges have overflowed and water damage to cargo may occur depending on the type of cargo (GM discretion). Ten units of flooding will cause any vessel to founder.

[R] Rigging Damage

Roll 1d100 against *current* Rigging Factor. Cross index success level with hazard type on the **Rigging Damage Table**, and generate rigging damage points as necessary. If rigging damage on any roll exceeds seven (7) damage points, the vessel makes no (further) headway this watch.

[C] Crew Loss/Injury

For the indicated number of randomly selected crewmen (eg. ***C2*** means two) roll 1d100 against their Seamanship ML. Determine the result on the **Crew Injury Table.**

Normally, only crew members on duty are eligible, although in any emergency most of the sailing crew (at least) will be on duty. Passengers are exempt, unless they are foolish or sick enough to be on deck, or have been pressed into service.

Most injuries result from concussion with various parts of the vessel and may be resolved as *Blunt* strikes with the ***Harnmaster*** combat system. Impalements and cuts are relatively rare, but the GM may assign a 10-15% of such injuries occurring.

Man Overboard: On a MF/CF result there is a 50% chance (GM discretion) that the victim is swept overboard. A man overboard in a gale or storm is not easily recovered, but may be washed ashore on a nearby coast. In better weather a man may be rescued by rolling MS/CS against the average of crew seamanship rating and the victim's swimming skill.

[6] SIGHTS

A sight is an attempt by the pilot to calculate his latitude by measuring the angle of a heavenly body above the horizon. Each horizontal grid line on our regional maps is one degree of latitude. Pilots may *shoot* the sun at noon, or the stars at dawn/dusk when both they and the horizon are visible. In game terms this may be taken to mean that sights may be attempted at the end of the first, third or fifth watches.

A sight is made by rolling against effective *Piloting ML.* as noted on the **Sight Table.** Sights cannot be attempted in fog or overcast, only when the sky is clear or cloudy, and a penalty applies in the latter case. EML is also reduced by ten times the windforce because it is difficult to take an accurate sight when the vessel is rolling and pitching.

EXAMPLE: *A pilot with ML75, taking a sight under a clear sky with a Cross-Staff (+10) in a force 2 wind (-20) would have an EML of 65.*

Marginal/Critical Success

Tell the pilot his exact latitude, given as a number of hexes/leagues north/south of a line of latitude.

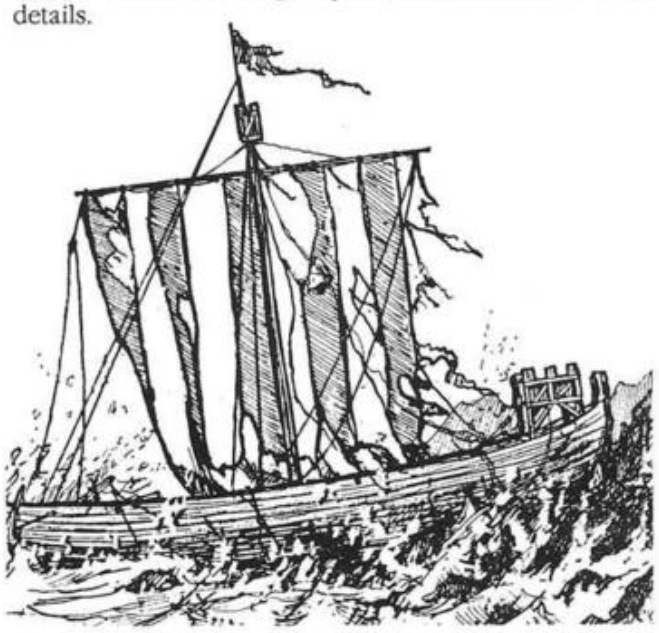
Marginal/Critical Failure

Sight is useless. The pilot gets no information.

Note: a sight taken ashore is not affected by the wind penalty. Pilots often take sights from land if they are unsure of its location.

[7] CREW ROUTINES

Every watch the crew may perform a variety of actions such as bailing, repairs, etc. See CREW 7 for details.



PILOTS' ALMANAC

MARTIME TABLES 1

PILOTING ROUTINE

[1] Weather.Generation
[2] Sail/Oar/Anchor Deployment
[3] Weather Hazard Roll.
[4] Encounter Generation.
[5] Movement
- **[5a] Course Declaration.**
- **[5b] Navigational Error (if any)**
- **[5c] Plot True Course**
- **[5d] Grounding Roll (if any)**
- **[5e] Vessel Disaster Roll (if any)**

[6] Pilot Sight (1st/3rd/5th watch)
[7] Crew Routines (repairs/etc.)

MOVEMENT POINTS

[SQ]	(0) Calm	(1) Light	(2) Steady	(3) Gale	(4) Storm
[0]	0	0	0	0/25	0/50
[1]	0	1	2	3/05	3/10
[2]	0	2	4	5/10	5/20
[3]	1	3	6	7/15	7/30
[4]	2	4	8	9/20	9/40
[Oar]	4	3	2	0/05	0/10
[A]	0	0	0	0/--	0/05

WEATHER HAZARD

	Gale (3)	Storm (4)
CS	No Problems	No Problems
MS	No Problems	F R C1
MF	F R C1	F R L C2
CF	H F R L C2	H F R L C3

Rolls are made in order indicated (left to right)

WEATHERLORE

GM roll against character's Weatherlore skill.

CS	Accurate report for next 1d3 watches
MS	Accurate report for next watch
MF	No report
CF	False/Random report for1d3 watches.

SAILING & OAR MP TABLES

SG	Square R	Square H	Square B	Mixed R	Mixed H	Mixed B	Venyn R	Venyn H	Venyn B
A	2	7	12	2	6	10	3	5	8
B	2	8	15	3	7	12	4	6	9
C	3	9	18	4	8	14	4	7	10
D	4	10	21	4	9	16	5	8	11
E	4	11	24	5	10	18	5	9	12

Oar OG	Oar MPS
A	2
B	3
C	4
D	5
E	6

Run (R), Haul (H), and Beat (B)

MARITIME ENCOUNTERS

Roll 1d20. Encounter with 19+
Determine environ, and roll 1d100

River	Coast	Open	Encounter
01-30	01-15	-	Land Encounter
31-49	16-30	01-08	Fishing Boat
50-65	31-50	09-22	Local Merchantman
66-70	51-60	23-29	Foreign Merchantman
71-75	61-66	30-40	Pirate/etc.
76-79	67-71	41-45	Local Warship
80	65-66	46-50	Foreign Warship
81-84	67-74	51-56	Mutiny/dissent/argument
85-88	75-76	57	Maelstrom/Tidal Bore
89-92	77-84	58-72	Freak Wind/Squall
93-94	85-86	73-74	Fire on Board
95-97	87-88	75-78	Equipment Failure
98	89-90	79-81	Food/Water Spoilage
99	91-92	81-84	Disease/Scurvy/etc.
-	93-98	85-98	Whales/Dolphins/etc
-	99	--	Seals/Walruses/etc.
00	00	99-00	Sea Monster (?)

NAVIGATIONAL ERROR

Roll against *effective* Hazard Rating, modified for navigational aid (if any) and sky cover. Also modify for windforce. Success level indicates the error roll.

Aid	Fog	O'cast	Cloudy	Clear
None	-50	-25	-5	+0
Sunstone	-25	-10	+0	+0
Lodestone	-20	-5	+5	+10
Compass	-10	+5	+15	+20

Windforce Modifier

[0]	[1]	[2]	[3]	[4]
+10	+5	+0	-10	-20

ERROR ROLL
CS/MS: No error
MF/CF: Possible Error. The GM secretly rolls 1d10 (MF) or 1d8 (CF). If the result is less than seven (7) navigational error occurs in direction indicated by the die roll on diagram below.

GROUNDING

Roll against *effective* Hazard Rating. A MF/CF result means the vessel has grounded and must immediately make one damage roll for each of Hull, Rigging, Flooding, and Crew Injury. Only with a CF on the grounding roll, is a vessel stuck aground (she must be refloated); with MF she is only delayed for this watch.

[H] HULL DAMAGE

Roll against *current* Hull Factor to Generate damage in **d6** for success level and hazard type. Damage taken affects (H) Hull Factor and/or (T) Tightness. That is, 2T means reduce Tightness by 2d6 points.

	Reef	Coast	River	Gale	Storm
CS	--	--	--	--	--
MS	2T/1H	1T	--	--	1T
MF	4T/2H	2T/1H	2T	1T	2T
CF	8T/4H	4T/2H	3T/1H	3T	4T/1H

[F] FLOODING ROLL

Roll against *current* Tightness. Success Level rolled determines FPs accumulated. When FPs aboard exceed 2, cargo damage may occur; when they reach 10, the vessel founders.

CS +0	MS +1	MF +1d3	CF +2d4

[R] RIGGING DAMAGE

Roll against *current Rigging Factor* Generate damage to Rigging for appropriate success level and hazard.

	Reef	Coast	River	Gale	Storm
CS	--	--	--	--	--
MS	2d6	1d6	--	1d6	2d6
MF	3d6	2d6	1d6	2d6	4d6
CF	5d6	3d6	2d6	4d6	8d6

Tangled Rigging: If damage exceeds **seven** rigging points, vessel makes no (further) headway this watch.

[C] CREW INJURY TABLE

Randomly determine Crewman. Roll 1d100 against his Seamanship. All results are applied at GM discretion.

CS/MS	No injury
MF/CF	3d6 Injury/Man Overboard

VESSELS AGROUND

Vessels aground make one damage roll for Hull, Flooding, and Rigging at the beginning of each watch. An attempt to **refloat** may be made at the end of every watch as noted on CREW 8.

HORIZON TABLE

Cross-index height of eye (feet) with height of object (feet). The result is horizon distance in leagues, assuming **clear** visibility. One league equals 2.5 miles (4Km) and five leagues equals one hex.

	Height of Object							
Eye	**0**	**25**	**50**	**100**	**250**	**500**	**1000**	**2500**
0	0	2	3	5	7	10	14	23
25	2	4	5	7	9	12	16	25
50	3	5	6	8	10	13	17	26
100	5	7	8	10	12	15	19	28
250	7	9	10	12	14	17	21	30
500	10	12	13	15	17	20	24	33
1000	14	16	17	19	21	24	28	37
2500	23	25	26	28	30	33	37	46

Note: the horizon on Kethira for any height (feet) is equal to 0.45 times the square root of height, with the answer in leagues. An object can be sighted at the *sum* of its horizon and the observer's horizon.

SIGHT TABLE

Roll against piloting ML, minus Windforce x 10, and modified for instrument used on table below.

	Clear	Cloudy	O'Cast
Quadrant	-10	-20	No Sight
Astrolabe	+0	-10	No Sight
Cross-Staff	+10	+0	No Sight

BAILING & REPAIRS

Roll against the watch's Seamanship Rating to Bail, against its Shipwright Rating for repairs.

	Bailing	Hull	Tightness	Rigging
CS	-2F	+2	+4	+6
MS	-1F	+1	+2	+3
MF	---	---	---	---
CF	+1F	- 1	- 2	- 3

Adjust Flooding; Hull Factor; Tightness or Rigging.

FIREFIGHTING

Roll against the watch's Seamanship Rating.

CS	Fire out
MS	3d6 damage/fire out
MF	4d6 damage/fire continues
CF	6d6 damage fire continues

(70% Fire Below Deck (-20 to Effective Rating).

PROVISIONS (Loss/Damage)

Roll 1d10, +5 per point of flooding over 2. The result is damage/loss as a percentage of mandays currently on board. Hence a roll of 6 with 5FPs, equals 21% (6 + 15) loss/damage. If mandays onboard are 234, the loss damage of 21% would leave 185.

WEATHER GENERATION

For a weather report when the previous watch's weather is unknown, roll 1d20 and place a marker on the table for the appropriate season in the numbered box equal to the roll.

WATCH BY WATCH VARIATION

Once started, weather is generated anew at the beginning of each watch. Roll 1d6 and consult the following table:

1d6	WEATHER CHANGES
1	MOVE 1 UP
2-4	NO CHANGE
5-6	MOVE 1 DOWN

***NB:** If marker moves off table then re-enter at other end, and if season changes then move (horizontally) to appropriate column.*

CLOUD COVER

- **OVERCAST** — **80% or more**
- **CLOUDY** — **20% to 80%**
- **CLEAR** — **20% or less**

TEMPERATURE

Since there are no good thermometers available, all temperatures are subjective. If an alternate temperature is given in brackets, eg: (Freezing), it applies during a **night watch .** Extreme temperatures (hot or freezing) may hamper crew efficiency at GM discretion.

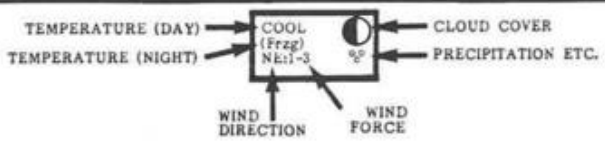
WIND

The letter code (N, NE, SE, S, SW, NW) indicates the mean direction from which the wind will blow during the watch; they correspond to the hex-grid on the regional maps. See Pilot 4 for comments on Windforce.

PRECIPITATION

- SHOWER(S)
- STEADY PRECIPITATION
- SNOW/SLEET
- * 75% chance if Temperature is Cold. 40% chance otherwise
- THUNDERSTORM- 10% chance
- FOG/MIST - Fog if Windforce is O.
- HAIL- 10% chance.

	SPRING	SUMMER	AUTUMN	WINTER
1	COLD N: 1-3	COOL N: 0-2	COOL (Cold) N: 0-2	COLD (Frzg) N: 0-2
2	COOL NE:1-3	WARM NE:0-2	WARM (Cool) N: 0-2	FRZG NW:1-3
3	WARM (Cool) SE:0-2	HOT (Cool) SE:0-2	WARM (Cool) NE:0-2	COLD N:2-4
4	WARM SW:1-3	HOT (Warm) S:0-2	HOT (Warm) SE:0-2	COOL (Cold) NE:1-3
5	COOL NW:2-4	WARM SW:0-2	HOT (Warm) S: 0-2	WARM (Cold) SE:0-2
6	COLD NW:2-4	WARM (Cool) S: 0-2	WARM SW:0-2	COOL (Frzg) S: 0-2
7	COLD (Frzg) SW:1-3	COOL SW:1-3	COOL NW:1-3	COLD SW:1-3
8	COOL SW:1-3	COOL NW:2-4	COLD SW:1-3	COLD NW:0-2
9	COLD NW:1-3	WARM (Cool) SW:1-3	COLD NW:2-4	COOL SW:1-3
10	FRZG N: 0-2	WARM (Cool) NW:1-3	COLD NW:1-3	COLD NW:1-3
11	COLD (Frzg) N: 1-3	WARM (Cool) N:1-3	COLD N: 2-4	COLD N: 2-4
12	COOL (Frzg) NE:1-3	HOT (Cool) NE:0-2	COOL NE:1-3	FRZG N: 1-3
13	WARM (Cool) SE:0-2	HOT (Warm) SE:0-2	WARM (Cool) SE:0-2	COOL (Frzg) NE:2-4
14	HOT (Warm) S: 0-2	WARM (Cool) S: 0-2	COOL S: 1-3	COOL (Cold) SE:1-3
15	WARM SW:0-2	WARM SW:0-2	COOL SW:2-4	COOL (Frzg) S: 1-3
16	COOL (Cold) NW:1-3	WARM (Cool) SW:1-3	WARM (Cool) S: 1-3	COOL (Cold) SW:2-4
17	COOL SW:2-4	COOL SW:2-4	WARM (Cool) SW:1-3	COLD (Frzg) NW:1-3
18	COOL SW:2-4	COOL SW:1-3	COOL (Cold) NW:2-4	COLD SW:2-4
19	COLD NW:2-4	COOL SW:1-3	COLD (Frzg) SW:2-4	COLD SW:1-3
20	COLD NW:1-3	COLD NW:0-2	FRZG NW:1-3	COLD NW:1-3



PATHFINDER 8½" x 11"(5 mm)

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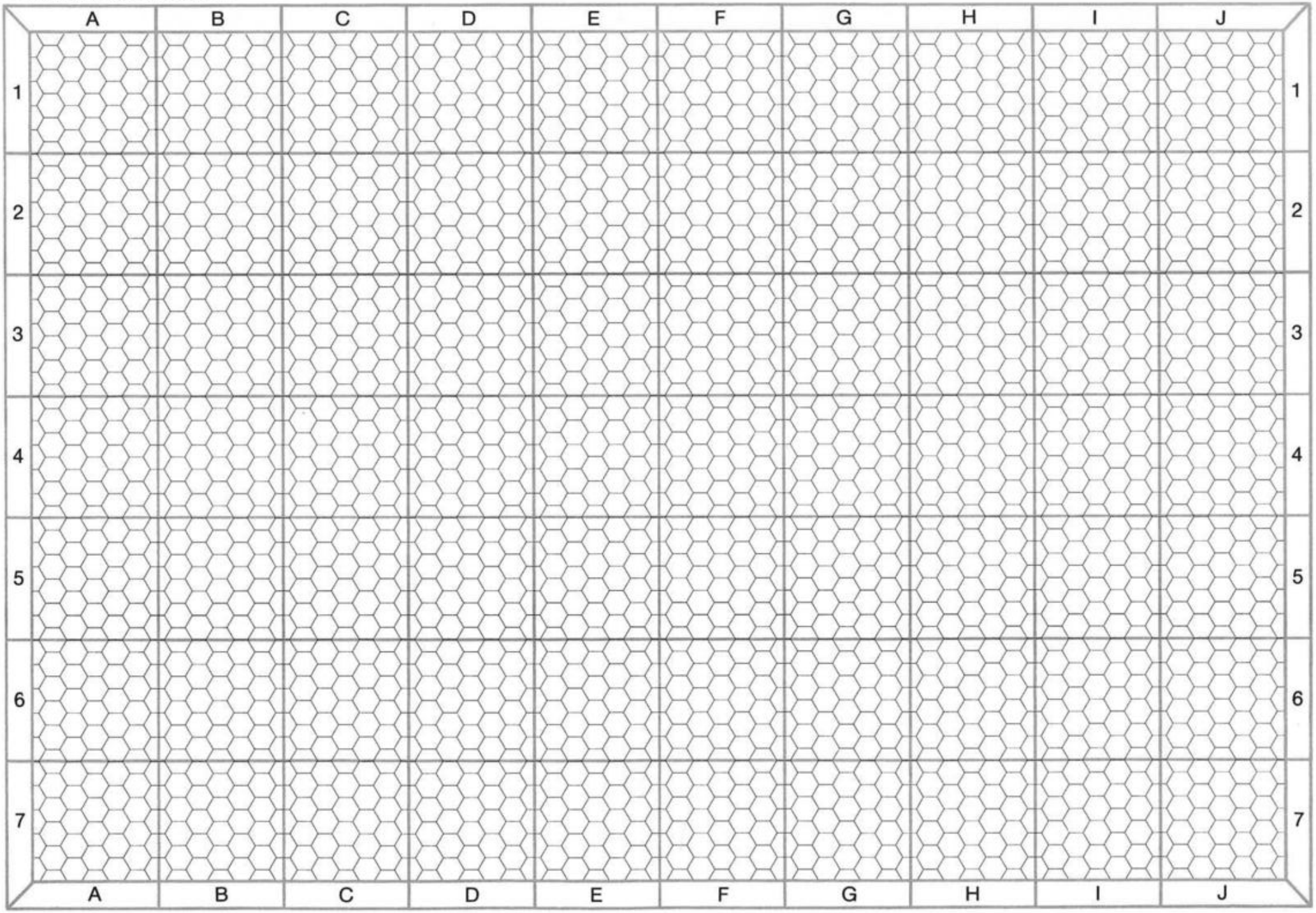

SEAMANS' GUILD

Anyone hiring seamen for a vessel over 30 feet in length must do so from the Seamans' Guild. If the guild cannot provide enough hands, unguilded labour may be used. The ranks of the guild are: deck boy (DB), ordinary seaman (OS), and able-bodied seaman (AB). Promotion to the next highest rank requires a minimum of two years sea-time in the current rank.

Because a seaman does not always serve on the same vessel throughout his career, when he is discharged from a ship the captain must report the details of his service to the local guildhall. When enough sea-time has been acquired, he will be promoted to the next highest rank at the discretion of guild officers

To prove his guild rank a seaman bears a tattoo on his left arm. Throughout western Lythia the Seamans' Guild has persuaded civil authorities to punish the bearing of a false tattoo with amputation of the offending limb.

DB **OS** **AB**

UNGUILDED SEAMEN (UG)

Most vessels hire unguilded seamen from time to time when the guild is unable to provide sufficient hands. Wages are highly variable, if any. Often men sign on for room and board and perhaps a modest sign-off bonus. Occasionally people sign on to "work their passages" for no pay.

Unguilded seamen receive no protection or benefits from the Seamans' Guild. They are sometimes maltreated by unscrupulous captains, and, since they pay no guild dues, they are generally unpopular with guilded seamen. Being an unguilded seaman does not necessarily mean an individual is lacking in maritime skills; some will have had experience on fishing or whaling vessels or on Ivinian ships all of which are generally crewed by unguilded seaman. It is, however, relatively easy to gain admission to the guild, so most who plan a career at sea will, sooner or later, join.

DECK BOY (DB)

Thirty days at sea will generally allow entry into the guild as a deckboy, the lowest rank. Deckboys are rarely paid regular wages, this is the equivalent of apprenticeship, but they generally receive a liberty chest and a share of any booty. It is also customary to give deckboys sign-off bonuses of sixpence per month of good service. Deckboys spend most of their time cleaning, pumping the bilges, and swabbing the decks. They are rarely given dangerous or critical duties until they have at least a year.'s experience.

ORDINARY SEAMAN (OS)

After two years as a deckboy, the seaman qualifies for the rank of Ordinary Seaman (OS). An ordinary seaman performs a full range of duties, sometimes, in time of need, even including the position of bosun or mate. PC seamen should generally begin play as OSs.

ABLE-BODIED SEAMAN (AB)

The highest rank of the seamans' guild requires at least two years of duty as an OS. In general, an AB's duties involve considerable responsibility aboard. Both the Mate and Bosun are generally ABs.

CREW POSITIONS

The captain designs his crew and hires personnel to fill the positions he has created. There are no requirements as to whom should be hired to fill what position, other than prudence and economy. The following are the common positions found aboard.

CAPTAIN

The captain is appointed by the shipowner, who may appoint himself. Captains may be completely ignorant of maritime affairs, but this is rare. Every ship has a captain. If the captain dies or is seriously injured, the mate or pilot will take over in accordance with the chain of command established by the owner. The captain is the ultimate authority, having the power to try cases, punish crimes and even execute any person aboard. His reputation as a fair employer does, of course, ride in the balance. The captain also decides on such matters as ports of call, cargoes carried, and transportation rates.

PILOT

The officer in charge of navigation. On some vessels, the pilot will also be the captain, but this is only common when he also owns the vessel. Nearly all pilots have apprentices, some have two. Master pilots should be fully generated with the Harnmaster rules if they are to be around for any length of time. Since there are no journeyman Pilots, a PC Pilot may begin play as a newly graduated master. If there is no pilot, the captain must appoint another member of the crew to do the piloting. A "designated pilot" is a poor substitute, however, and used only in emergencies.

CREW 2

MATE

The mate is the senior member of the sailing crew and is responsible for the day to day operation of the ship. He commands all seamen aboard and usually keeps the Port watch. On small vessels the mate's duties may be performed by the captain. Where the position exists, it is almost always held by an experienced Able-Bodied Seaman.

BOSUN

The bosun normally ranks second to the mate and commands the starboard watch. The position is, whenever possible, filled by an able-bodied seaman.

DECKHAND

This position may be filled by ABs, OSs, DBs or unguilded seamen. Obviously, a better crew costs more but makes for a safer voyage.

OARSMEN

Oarsmen are generally not members of the Seamans' Guild. Aboard galleys they are often slaves. On Ivinian dragonships, everyone aboard helps to row, sail, and fight. The skills of an oarsman may be assumed to be those of a deckboy, unless they are Ivinian, in which case their skills would roughly be those of an OS plus Roundshield 60, and one other weapon at 70.

CHIPPY (Ship's Carpenter)

A bonded master or journeyman member of the Shipwrights' Guild, usually with an "associate membership" in the Seamans' Guild which costs 12d per annum. Chippies provide maintenance and repair expertise, but are generally only found on larger and wealthier vessels.

SUPERCARGO

A bonded master mercantyler specializing in marine trade. A supercargo generally holds an "Associate Membership" in the Seamans' Guild (12d/year). Duties include the purchase and sale of cargoes, calculation of freight rates, cargo stowage plans, etc. As a guilded mercantyler, a supercargo will generally negotiate better deals with his associates.

MARINE

A mercenary soldier with sea-going experience. Marines may be carried by merchant ships and are usually found on naval vessels.

OTHER CREWMEN

There are also sea-going physicians, engineers, cartographers, harpers, heralds, and weaponcrafters, to name a few. Their skills may be generated with the ***Harnmaster*** rules. One with sea experience may add Seamanship at SB2 or 3 or open it at SB1 if this is his first voyage.

CREWING A VESSEL

Crewing is ultimately the responsibility of the captain, but the task is often delegated to a subordinate. The mate/bosun usually deal with seamen, the pilot always chooses his own apprentices, and the marine commander hires/fires marines. Typically, an ocean-going vessel will have a crew made up primarily of ordinary seamen. A mate, bosun, and perhaps a few other deckhands will be ABs; there will probably be a few deckboys and unguilded seamen, and often a smattering of specialists.

Hiring a Crew

Someone in need of crewmen may apply at the local Guildhall(s). Alternately, a vessel may wear the *Hiring Pennant* at the head of the main gangway, a convention understood by seamen in all civilized ports. The hiring pennant is blue with five diagonal wavy green lines.

The GM determines the number of applicants who appear each day, depending on the size of the Seamans' Guildhall (see *Port Almanac*). Roll the die indicated on the table following:

Guildhall	Roll
Large	1d12-1
Medium	1d8-1
Small	1d4-1
None	1d2-1

Crew Generation Table

For each applicant, roll 1d100 on the following table to generate his rank and Primary Skill.

Roll	Rank/Position	Primary Skill
01-15	Able-Bodied Seaman	Seamanship/3d6+60
16-65	Ordinary Seaman	Seamanship/3d6+45
66-75	Deckboy	Seamanship/3d6+25
76-85	Unguilded Seaman	Seamanship/3d6x4
86-90	Pilot	Piloting/3d6+65
91	Pilot's Apprentice	Piloting/3d6x4
92-94	Chippy	Shipwright/3d6+60
95	Chippy's Mate	Shipwright/3d6+30
96-00	Other	GM discretion

Additional Skills

For ease of play, seafarers may be assumed to have a SB of 12 in all maritime skills. Someone going to sea for the first time will have seamanship at SB1. A non-seaman who has served at sea will have a Seamanship ML of SB2 to SB4 (GM discretion).

A character with Seamanship is presumed to have Shipwright and Piloting MLs, at least, 50% of his Seamanship ML. A Pilot is presumed to have Seamanship at three-quarters, and Shipwright at one half of his Piloting.ML. Other skill information may be obtained as needed from *Harnmaster*.

Maritime Incomes

The following is a list of typical benefits for the common shipboard positions. Basic pay can be a per diem **wage** or a **share** of the owner's fraction of a cargo (see *Maritime Trade*). The usual style of recompence for the position is given in **boldface.** **LC** is the number of Liberty Chests normally associated with the position. Each crewmember has an individual contract with his employer, the owner. These matters vary at GM discretion and are negotiable.

Position	Wage	Shares	LC
Owner	- -	**60**	-
Captain	10d	**20**	5
Master Pilot	8d	**16**	4
Apprentice Pilot	--	0	1
Mate (AB)	**4d**	8	3
Bosun (AB/OS)	**3d**	6	2
Deckhand (AB)	**2d**	4	1
Deckhand (OS)	**1d**	2	1
Deckhand (DB)	-.-	0	1
Deckhand (UG)	**2f**	1	0
Chippy	**3d**	4	3
Chippy's Mate	**1d**	0	0
Supercargo	4d	**7**	4
Ship's Physician	**3d**	6	1
Marine Commander	**3d**	6	3
Marine Lieutenant	**2d**	4	2
Ordinary Marine	**1d**	3	1

Negotiation

Crewmen are hired one at a time. If an applicant is of interest to the hiring officer, he should be interviewed. A seaman must show his guild tatoo and disclose where, when, and under whom his last voyage was made. The hiring officer should **not** be told skill MLs until after the applicant has signed-on, only his guild rank and general experience.

Any potential crewman may be enticed with an offer of higher than normal pay, or a sign-on or pay-off bonus. The crewman should be told the anticipated duration of employment and whether or not there is unusual danger. The crewman assesses the terms of employment and negotiates; his response may be resolved by a (secret) 1d100 roll, modified by the following considerations:

Voyage under 1 month	- 10
Voyage over 6 months	- 15
Dangerous Duty	- 15
Very Dangerous Duty	- 30
Vessel has good reputation	+10
Per 1d sign-on bonus	+2
Per 1d pay-off bonus promised	+1
Promise of Booty	+1
Wage/Share above	+20
Wage/Share below normal	- 20

1d100	Negotiation Result
25/less	Leaves in disgust
26-80	Makes higher counter offer
81+	Accepts offer

Unless the crewman leaves in disgust, a new roll may be made for each *significant* improvement in the ship's offer. Seamen usually sign on for the duration of a voyage; the captain is obliged to return the crewman to his sign-on port unless both parties agree otherwise. All details concerning a crewman, including his, rank, job, wage, and any special terms negotiated, are recorded on the **Crew List.**

LIFE AT SEA

It does not take long for a new deckboy to discover that the romance of the sea is far different from the reality of shipboard life. His excitement at boarding a vessel for the first time, bound for foreign and exotic ports, soon evaporates, usually helped along by a week or two of wretched sea-sickness, The hours are long, the pay is low, the food is atrocious, and his shipmates will be a hard lot who do not tolerate fools.

CREW 4

WATCHES

At sea, the majority of seamen work alternating four hour watches. That is, four hours on duty, and four hours off, for a total of twelve hours per day. Mariners have their own (somewhat odd) names for these watches as noted below. Seamen are generally assigned to one of two duty watches, either the Port or Starboard watch. These are on duty at specific times:

Time	Watch	Duty
0001-0400	Middle	Port
0401-0800	Morning	Stbd
0801-1200	Forenoon	Port
1201-1600	Afternoon	Stbd
1601-2000	Evening	Port
2001-0000	Night	Stbd

The mate usually commands the Port watch and his bosun the Starboard. However, both men defer to the pilot in matters of navigation and ship handling. A pilot does not command any of the seamen aboard. Theoretically, any orders he gives to them should be made through the mate or bosun. In practice, however, the pilot will issue direct orders to the helmsman and lookout, and order seamen aloft to increase or shorten sail, etc. But if the pilot and mate dislike each other, things can get quite interesting.

Seamen on watch handle a variety of chores depending on the situation and time of day. The duty of helmsman and that of lookout are generally rotated hourly because it is difficult to maintain vigilance for four consecutive hours. All seamen on watch not currently serving as helmsman or lookout are involved with changing and trimming sail as required, or with maintenance of the vessel, its rigging and sails, etc. Seamen off watch are on call. The normal daily routine is tiring enough, but rough weather can make it exhausting.

Some crewmen, notably the supercargo and chippy, normally serve a day watch (0600-1800) but are on call at all times. In port or at anchor, the established watch routine is commonly suspended; the majority of seaman are assigned to the day watch. Most repairs and heavy maintenance are done while the vessel is in port or at anchor, and the crew may also be involved in cargo stowage. Such chores are obviously easier during hours of daylight.

CREW QUARTERS

The space devoted to crew quarters on most vessels is cramped and noisome. Many vessels do not have cabins or specific areas reserved for common deckhands; they sleep where they can, and the new deckboy has to be very nimble to find room to rest. More liberal captains have sought to improve this situation by quartering seamen in one or more large cabins located in the fo'c'sle or forepeak, sometimes sometimes in the steerage (the space at the stern below the quarterdeck). Officers, such as the captain, pilot, mate, and supercargo, generally have small private cabins in the quarterdeck or steerage, as might the bosun and chippy when space permits.

LIBERTY CHESTS

Most captains allow their crew the privilege of Liberty Chests. These are trunks or sea-chests in which seamen may carry trade goods for personal gain. Veteran seamen can accumulate considerable wealth by astute trading. To prevent excessive abuse, liberty chests are of a standard size: 3ft long, 2ft wide, and 2ft high. The number of chests permitted each crewmember is negotiable. See *Maritime Income* Table above. Naturally, there is flagrant abuse of the custom, especially if the owner is not aboard. The captain is often the biggest offender..

DIVISION OF SPOILS

Booty may be pirated, salvaged or otherwise obtained by the vessel. Such windfalls are traditionally divided among the crew according to their shares (see *Maritime Income* Table). Each person aboard, even apprentices, are normally given at least one share of each windfall.

A crew is entitled to share in one half the value of any vessel/cargo salvaged, payable before the salvage is returned. If such monies are not paid within 90 days, salvaged assets become the property of the salvager and may be disposed of as he sees fit.

PROVISIONS

The quantity of food at sea is usually generous, but the quality is dismal. Fresh meat and vegetables are rarely available. Diet at sea consists mainly of bread, peas, beans, oatmeal, fish, biscuit and dried, salted, or pickled meat. The drinking water is fouled by organic growths within about twenty days of leaving port. Tales that water can be drunk only by holding the nose and clenching the teeth (to strain it) are not exaggerated. The bread is usually crunchy with weevils. Most ships are plagued by rats which always find a way to get into the food stocks and contaminate with their droppings.

Consumption

The amount of provisions (food and water) carried aboard is measured in mandays and kept track of on the Vessel Profile. Most vessels carry surpluses. Each day sufficient mandays are deducted from the total, which is also adjusted when new supplies are taken aboard, or when spoilage occurs.

Obtaining Provisions

The cost of provisions can vary dramatically. Some may be obtained free (foraged/pillaged), some may be purchased in ports.from chandlers who specialize in provisioning ships. Supply and demand may be important considerations. As a general guide,

purchased provisions cost one halfpenny per manday assuming water is obtained free (river/rain/etc.), but could cost as much as 1d per manday if water must also be purchased from a local well. Running low on Provisions is likely to encourage mutiny/dissent, and running out will decrease crew efficiency.

DISEASE

The **Maritime Encounter Table** may generate disease or scurvy aboard. Many seaman die of disease, the most common being typhoid and dysentery. The GM may determine the incidence by randomly choosing 1d6 crewmen. Disease is more likely when the vessel has just left a port, especially in tropical climes. The poor diet, confined quarters, and general lack of hygiene aboard ships will spread any contagious illness very quickly. See ***Harnmaster*** (Combat 28) for more information.

Scurvy

A lack of fresh vegetables is a serious deficiency in the diet of seamen. The crew of vessels on lengthy voyages soon develop *The Scurvy,* a dreaded disease of unknown cause. Scurvy can appear in a mild form within one month and kill within two months. Fortunately the disease is not contagious.

Scurvy is most likely when the vessel has not taken on fresh provisions for 30 days, but a seaman could also have signed-on with a minor case. An afflicted man will die within 10d6 days unless sufficient fresh provisions are made available, and will be unable to work when half this time has passed. **Note:** since the cure for scurvy is not generally known, fresh provisions are necessary for *all* crewmen, not just the afflicted men.

LAW AT SEA

Seamen are not known for their placid and cooperative natures. Mutiny may occur if the crew has been over-worked, ill-fed, and ill-treated, but full blown mutinies are not common. Disputes between members of the crew are another matter because the cramped working and living conditions on most vessels are quite stressful. Persistent trouble-makers often disappear.

The captain is the ultimate judicial authority. He has the power to investigate, try, and punish all crimes. Fines of 1-10 days pay and/or floggings of 6-24 lashes are the most common punishments for minor breaches of discipline. Severe punishments are to maroon the offender on a suitable island, or drag him under the vessel's keel (keel-hauling) which is virtually a death sentence. Capital punishments are not common, but may be imposed for serious crimes such as mutiny or murder. Executions are generally by hanging. Many captains make a practice of punishing serious and capital offences by selling the miscreants as galley slaves.

Mutiny is defined as any serious breach of discipline. This may simply be the action of one individual who refuses to carry out a direct order, or the combined action of two or more men, perhaps the whole crew. In extreme cases, a mutinous crew may seize control of the vessel, and murder or maroon the former officers.

All punishments must be recorded in the log and reported to the Seamans' Guild at first opportunity. A reputation for harsh or overlax judgements may have serious consequences on crew morale and recruitment. Occasionally, vessels are (unofficially) blacklisted by the guild(s).

CREW 6

THE CREW LIST

Information pertaining to the crew is kept on a running form called the **Crew List.** A blank form suitable for photocopying is provided. As each crewman is hired, discharged, paid, promoted, etc., an entry is made on the crew list.

Rank

The crewman's guild rank as applicable.

Position

The crewman's actual job aboard.

Wage

The crewman's daily wage or share determined when he signs-on or is promoted. Unlike shore occupations, crewmen are paid for 30 days each month because vessels do not normally stop for holidays, etc. Wages owed are accumulated until a crewman is paid-off, although advances are commonly given. See *Maritime Income* Table (Crew 3).

ML

The crewman's *principal* ML. Other MLs may be derived as needed or entered in the notes column. See *Additional Skills* (Crew 2).

Watch [Wch]

Record the duty watch Port (P) or Starboard (S) for this crewman if relevant.

Port

The port where the crewmen signed on. This is important because a seaman is obliged to serve until his vessel returns to this port. A crewmen may request to be discharged in any port, which the captain may allow or not as he wishes. The captain may discharge any seaman in any port, but must provide compensation if this is not his sign-on port, unless the seaman is being discharged for cause.

Sign-On

The date the crewman is hired.

Pay-Off

The date the crewmen is discharged and paid-off, or the date of his death/loss if appropriate. This box will be blank until one of these events occurs.

Owed

The number of **days** for which the crewman is owed wages, as of the last crew list **Update.**

Notes

This space is used to enter miscellaneous information such as bonuses promised, injury and punishment details, special skills, etc.

Crew List Updates

The vessel captain should **update** the crew list on a regular basis to reflect changes in crew, wages owed, etc. This is generally easiest to do when the vessel arrives at a port since most changes on the crew list will occur then, but the captain may use any convenient interval to run an Update. All crewmen (even dead ones) must be dealt with. Note the date of any Update in the space provided.

[1] Days Owed

Add the total days since the last Update to the number of days previously recorded under *Owed.*

[2] Paying-Off

The captain must decide if he wishes to retain or discharge this crewman. If this is the crewman's home port there is a good chance (80%) he will request to be paid-off. If the crewmen's services are no longer required he must be paid in full for days owed and any promised bonuses.

If the crewman is paid off in his sign-on port, this ends the ship's obligation to him. Otherwise, a reasonable settlement must be negotiated; 10-30 days bonus pay is fair depending on the local job prospects. If a crewmen is being discharged for cause (incompetence, mutiny, etc.) no such consideration is due. Note the date of discharge.

[3] Crew Losses

If a crewman dies/disappears, the captain must note the date on the crew list. A report must be filed with the Seamans' Guild in the first port entered, and the captain has a duty to pay off for any deceased man in a "timely manner". By custom, payment is made at the guildhall where the report is filed. The guild will use the funds to care for local widows and orphans of former guild members. Full payment of wages owed (to the date lost) plus 30 days *widow bonus* is normal. Often the.benefits paid are greater since the vessel's reputation is at stake.

Occasionally a crewman will "jump ship". This is more commonly the result of foul play or misadventure than by choice because this action forfeits all wages owed. There is a 20% chance that 1d3 crewmen will jump ship in any port, although the GM should make allowances for the number of days owed, rank, morale aboard, etc.

[4] Crew Skill Improvements

Update may be a convenient time to handle skill improvement rolls for crewmen. Each crewman is entitled to three (3) improvement rolls per **month** and may receive bonus rolls at GM discretion. Changes in the Seamanship MLs of crewmen will require a recalculation of Crew Ratings.

CREW ROUTINES

Each watch, the crew is able to attempt a variety of actions having to do with repairs, bailing, fire-fighting, etc. These tasks are (normally) resolved at the end of the watch, but the GM may allow them to be done during the watch at his discretion.

VESSEL CREWING FACTOR (VCF)

The larger and more complex the vessel, the more men are needed to run her. VCF for any vessel is her *length* divided by ten (round-off), plus *two* men per square-rigged mast, and *three* men per venyn-rigged mast. Hence, a 60 foot vessel with one square-rigged and one venyn-rigged mast, has a VCF of 6 + 2 + 3 which equals 11.

Rated Crews: The amount of crew carried is always at the discretion of the captain. As a guideline only, a vessel will need double her VCF as sailing crew. If rated for oar, the number of oarsmen required is length divided by five (number of oars per side) times one quarter of the beam. Reduce this number by her sailing crew if they are available to row.

DUTY WATCHES

All *seamen* aboard from the mate to unguilded seamen should be assigned to one of two duty watches. The *Port Watch* runs the ship during odd numbered watches and the *Starboard Watch* during even numbered watches. Crewmen may be transferred between the two watches at the discretion of the captain. Although most captains will tend to keep the watches relatively balanced, this is not essential.

Pilots & Chippies

These personnel are not assigned duty watches. The main duty of the apprentice pilot is to be on duty when the pilot is below, and to alert the pilot when needed. Consequently, it may be assumed that the master pilot is available whenever his services are required unless sickness or injury incapacitate him.

Similarly, neither the chippy or his mate (if carried) are assigned to duty watches. They will normally be working during daylight hours on maintenance chores, but are on call at all times.

Emergency Assignments

If all is going well, only members of the sailing crew (those hired to sail the vessel) are assigned to duty watches. But when the survival of the vessel is at stake, it may be expedient to assign marines, oarsmen, officers or even passengers to a duty watch to bolster its ratings. In theory, anyone assigned to a duty watch who does not have Seamanship or Shipwright skill open, should open them. But for most purposes the assumptions made on **Crew 2** under *Crew Generation and Additional Skills* will hold..

WATCH RATINGS

When assignments or re-assignments to duty watches have been made, three Watch Ratings must be calculated for each of the two watches, and entered on the *Vessel Profile*. Watch Ratings are used to resolve the success of various crew routines.

Seamanship Rating

The sum of all Seamanship MLs in the duty watch, divided by VCF. Hence, if eight seaman with total MLs of 520 were assigned to the Port Watch, and the VCF was 10, the Seamanship Rating would be 520 divided by 10, which equals 52.

Shipwright Rating

The rating used when repairing the vessel. If there is no Chippy, Shipwright Rating will be one half Seamanship Rating. If there are one or more chippies aboard, this rating is averaged with their Shipwright MLs. Hence, if the duty watch with a seamanship rating of 52 was aboard a vessel with one Master and one apprentice chippy, whose Shipwright MLs were 72 and 38, its Shipwright Rating would be 45. If a "designated carpenter" is appointed, he may not be assigned to any duty watch. Note that the Chippies are included with both duty watches.

Hazard Rating

A rating used to determine the response of the pilot and crew to some emergency such as grounding. It is equal to the average of the Piloting ML of the master pilot and the Seamanship Rating. Hence if Seamanship Rating is 52, and the pilot's ML is 78, the Hazard Rating for this watch would be 65.

Effective Crew Ratings (optional)

A wide range of ailments such as plague, scurvy, starvation or thirst may be sufficiently widespread aboard as to justify penalizing Crew Ratings. The GM can apply such penalties at his discretion.

Morale may also affect crew performance. The GM may apply a bonus or penalty to Crew Ratings at his discretion. Keep in mind that if the crew's survival is at stake, they will generally try to complete a duty regardless of morale.

CREW TASKS

The **on-duty** watch can perform a maximum of **two** tasks if the vessel is in port or at anchor, or **one** task if the windforce is less than three (gale). If the windforce is 3 or 4, the on-duty watch can perform no tasks. Tasks, (such as bailing, repairs, etc.) are assigned by the watch commander.

The **off-duty** watch can also be called on to perform one or two tasks, but will accumulate fatigue if this is done.

CREW 8

Crew Fatigue

The off-duty watch accumulates five (5) fatigue points per task it is required to perform. This fatigue is acquired at the end of the watch in which the task(s) are performed. Cumulative fatigue should be recorded in the space provided on the *Vessel Profile* and penalizes all three crew ratings.

Recovery of Fatigue

The off-duty watch recovers ten (10) points of fatigue when it is not called on to perform any tasks in a watch. The on-duty watch can recover five (5) fatigue points if it performs only one task (sailing the vessel in a less than galeforce wind)

ALLOCATING TASKS

The officer in command may allocate available labour as he wishes. For each task, a roll is made against the appropriate rating to resolve success. Any job may be attempted more than once, provided there is sufficient labour available. Hence, the duty watch may use an optional task to bail, and the off-duty watch may be called on to perform two additional bailing tasks, or two other jobs as needed. The following describes the basic jobs that may be attempted; the GM may add others as he wishes.

Bailing

An attempt to reduce the number of *Flooding Points* aboard. Roll against Seamanship Rating and interpret success with the **Bailing/Repair Table.**

Fire-Fighting

Fires are generated by the Encounter Table, and may also result from acts of war or sabotage at GM discretion. Fires are feared by all seafarers. Despite the plentiful water supply, ships are cramped and this makes fires hard to fight. Most fires start below deck (70% chance).

The watch fights fires by rolling against its Seamanship Rating with a special penalty of 20 for below deck fires. Success is determined with the **Fire-Fighting Table.** If the fire is not extinguished after all available tasks have been expended, its time to abandon ship. Damage points generated are distributed at GM discretion among hull, rigging, provisions, cargo, etc.

Kedging

Vessels which possess at least one anchor and one pinda may *kedge* in reasonably shallow water. If the vessel has two anchors/boats a second task (only) may be allocated to this job. CS/MS will move the vessel *one half* hex this watch. MF means no progress, and CF also indicates a lost anchor or some other problem at GM discretion.

Refloating

An attempt to refloat a grounded vessel. For each attempt, roll against the appropriate **Hazard Rating,** modified at GM discretion for windforce, current flooding, draft, etc. The tide may also be very significant; if the vessel ran aground at low water, the flooding tide will be of great benefit. But if the vessel ran aground at high tide, jettisoning all cargo may be the only alternative to founding a colony! CS/MS on a roll means the vessel is refloated.

Shipboard Repairs

An attempt to repair damage to the Hull, Tightness or Rigging. For each attempted repair (one per available task) a roll is made against **Shipwright** Watch Rating during hours of daylight, and against 50% rating during hours of darkness.

SPARES

Repairs at sea may **not** be attempted unless there are sufficient spares aboard to do the job. The number of spares required for *each* attempted repair is equal to her **Repair Factor,** that is a vessel's Gross Burthen divided by 100, with a minimum of one spare. These are expended even if the repair attempt fails.

The number of spares carried is always at the discretion of the captain. Each spare takes up one *tenth* of a tun of burthen, that is ten spares equal one tun. Spares can be purchased from any shipwright. Each spare costs 100d, plus the yard's Cost Factor (CF) as noted in the **Port Almanac.**

Repair success is interpreted with the **Repair Table.** Cross-index the success achieved with Hull, Tightness or Rigging (as appropriate) to find the number of damage points repaired. With CF, the repair was botched resulting in more damage (alternately, the GM may assign a Crew Injury roll).

CREW LIST

VESSEL_____

REGISTRY_____

Rank	Position	Wage	ML	Wch	Port	Sign-On	Pay-Off	Owed	Notes
	Captain								

YEAR | MONTH

VESSEL_____ **Gross** _____ **tuns**

REGISTRY_____ **Net** _____ **tuns**

LOG DAY	1st Watch Midnight to 4:00 am	2nd Watch 4:00 am to 8:00 am	3rd Watch 8:00 am to Noon	4th Watch Noon to 4:00 pm	5th Watch 4:00 pm to 8:00 pm	6th Watch 8:00 pm to Midnight
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15 ○ Yaelah						

16						
17						
18						
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25						
26						
27						
28						
29						
30 ● Yaelmor						

PERMISSION TO PHOTOCOPY

SHIPWRIGHTS GUILD

Shipbuilding is one of the largest manufacturing activities in Lythia. Every port has one shipyard owned and operated by a freemaster of the Shipwrights' Guild. Shipyards vary greatly in size and capacity. A freemaster's yard may be a large establishment in a major port where great ocean-going ships are built and repaired, or a small boatyard in some isolated backwater where only dingies and river craft are produced.

The Shipwrights' Guild has a monopoly over shipbuilding and some related arts. A freemaster shipwright is a highly respected individual in any community, fully qualified in the arts of vessel design and construction, and able to make sails and rope although the guild does not have a monopoly in this latter activity. Metal fittings for ships are often sub-contracted to freemaster metalsmiths or made by bonded metalsmiths in the shipwright's employ.

Apprentices

It is deemed a great honour to be accepted as an apprentice into the Shipwrights' Guild. With only one establishment in a settlement, the local freemaster is guildmaster, and may admit anyone he pleases, but most positions are taken by the children of masters. Apprenticeship usually begins at twelve and lasts seven years during which a grounding is acquired in all of the shipwright's arts. Apprentices are unpaid, but receive room and board and occasional pocket money. A master shipwright can affford to be more generous than his peers in other guilds.

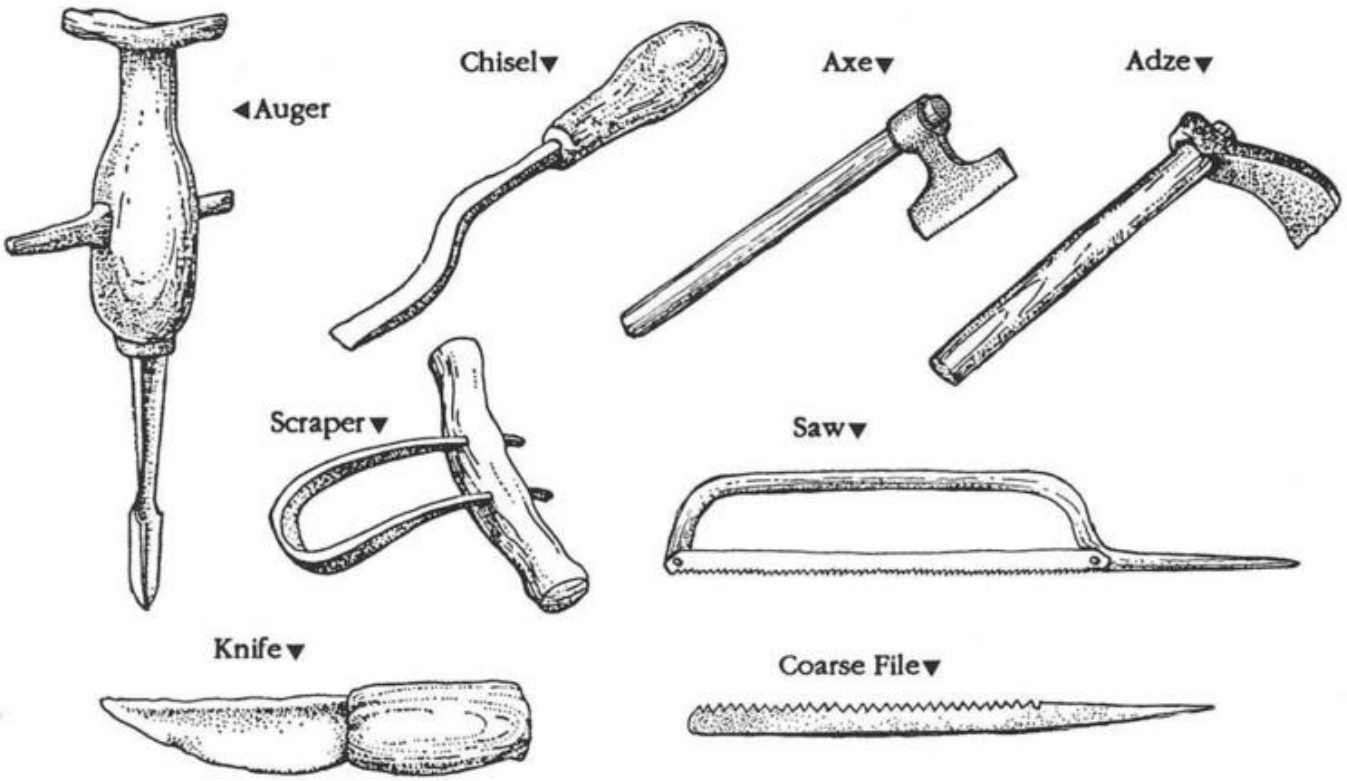
Journeymen

A diligent journeyman will travel to all the distinct shipbuilding regions, learning the shipbuilding styles and techniques of several cultures. Some sign-on as ship carpenters, but unless serving under a master carpenter, this experience is not recognized by the guild. In the course of his travels, the journeyman will seek the written approval of the freemasters who employ him. When he has collected at least a dozen approvals over a period of not less than three years he may call himself a master.

Skills: The PC shipwright should normally begin play as a newly qualified journeyman with the following occupational skills: Shipwright [SB4]; Carpentry [SB3]; Timbercraft [SB3]; Metalcraft [SB2]; Woodcarving [SB2]; Mathematics [SB2]; Seamanship [SB2], and the local script. He will also have 5 option points (see ***Harnmaster*** Skills-2).

Masters

A master may continue journeying and should he find a settlement which has no shipwright he may found a yard (probably a small boatyard). With luck his enterprise will grow and eventually be recognized as a free-franchise by the guild. Most masters, however, find it easier to seek permanent or temporary employment in large shipyards as bonded-masters, and the majority of master shipwrights are so employed. If a freemaster dies heirless, it is usually one of his bonded-masters who will inherit the franchise. A master may also be employed as a ship's carpenter (chippy), or by governments or noble houses wealthy enough to own their own shipyards.



SHIPWRIGHT 2

SHIPYARDS

The key factor in locating a shipyard is access to materials, especially good and plentiful timber. Oak is most commonly used, for keels, ribs, and hull strakes, pine and fir for masts, spars, and decking. Mahogany and teak are more resistant to rot and highly desirable, but must be imported from south-eastern Lythia or central Anzeloria making their costs prohibitive. Assuming an average yield of 600 board feet per tree, it takes roughly one tree per tun burthen to build a vessel, hence a 200 tun vessel requires 200 oak trees. Obviously, a thriving shipyard can quickly denude the local area and be forced to import lumber.

The shipyard in a major port is a huge undertaking, with scores or even hundreds of employees, and facilities spread over acres of prime waterfront. The freemaster may be in a state of luxurious semi-retirement. Bonded masters will have charge of specific activities or projects. There may be several slipways, sail-lofts, shops where ship's fittings are made, acres of seasoned and seasoning timber, offices, boathouses, careening facilities, and so on. Some yards are capable of building and/or overhauling as many as six vessels at once.

Building new vessels is not likely to occupy a shipyard fully. Much of its business comes from repair and maintenance of existing vessels. Ships are dragged ashore (beached) or careened to allow access to lower strakes. The hull is then scraped of marine growth, damaged strakes are replaced, seams are re-caulked, and the exterior is painted with tar or pitch as a preservative Ropes and sails also need continual replacement.

A few yards boast tidal dry-docks which vessels can enter at high tide. At low tide, when the vessel has settled on cradles, lock gates are closed to prevent the water rising inside the dry-dock. This allows shipwrights to work on the vessel hull under optimum conditions. When their work is finished, the lock gates are opened at low tide to refloat the vessel as the tide rises.

Shipwrights are conservative by nature. Over centuries of shipbuilding they have evolved methods of construction and adopted vessel designs that have proven seaworthy.in their locales. The square-rigged, clinker hull dominates in Harn, Ivinia, and Shorkyne. The venyn-rigged, carvel-built hull is equally dominant in Azeryan and Karejia. Few shipwrights will experiment with new designs or build vessels alien to their regions.

Shipwrights in Trierzon are something of an exception. Located mid-way between the regions which favour one vessel design over the other, they have been influenced by both styles and have adopted the best features of each. Most Trierzi shipwrights can build any vessel from a *Dragonship* to a *Venar*. They have also combined both methods of construction in a single vessel, notably the innovative *Karune*. This climate of innovation has also led to Trierzi shipwrights widely adopting the rudder, a superior steering mechanism invented in Shorkyne in the middle of the last century. Most shipwrights in Ivinian colonies are also innovative, being largely responsible for devising the first cog. Most of them now consider the sleek Dragonships of the golden age of viking as old-fashioned and dangerous, suitable only as elaborate coffins for wealthy valhakars.

Regardless of regional preference, the design and construction of a sturdy, watertight hull is of paramount importance. The backbone of a ship hull is the keel. Shipwrights building a carvel hull will attach ribs to the keel and the entire structure is locked together with fore and aft planking (strakes) and traverse deck beams which also support deck planking. If a clinker hull is being built, overlapping, full length strakes are fastened to the stern and stem posts and to each other, beginning at the keel and working up. Light ribs and deck beams are usually added *after* the hull is straked. In either case, the hull is held together by nails and hardwood dowels, and seams are caulked with oakum.

During construction of the hull, apprentices and journeymen are engaged in the manufacture of sails, rigging, and other fittings for the vessel. After the hull is launched about two-thirds through construction, work begins on mounting masts, installing rigging, building cabins, storerooms, sail lockers, and a host of other time-consuming details.

Completing the shipbuilding task, some ships are handsomely endowed with intricate wood carvings, but most important to the pilot/mariner is how the entire structure - hull, sails, and rigging, work together at sea. The effect of wind and wave on thousands of pieces of wood held together with nails and pegs produces extreme and complex stresses. Ships creak, groan, splash, and heave their way through stormy seas in a precarious balance of flexibility and rigidity, hull speed and sail design. It is a dynamic equilibrium (hopefully) which requires constant monitoring and adjustment by the pilot and sailing crew.

SHIPS

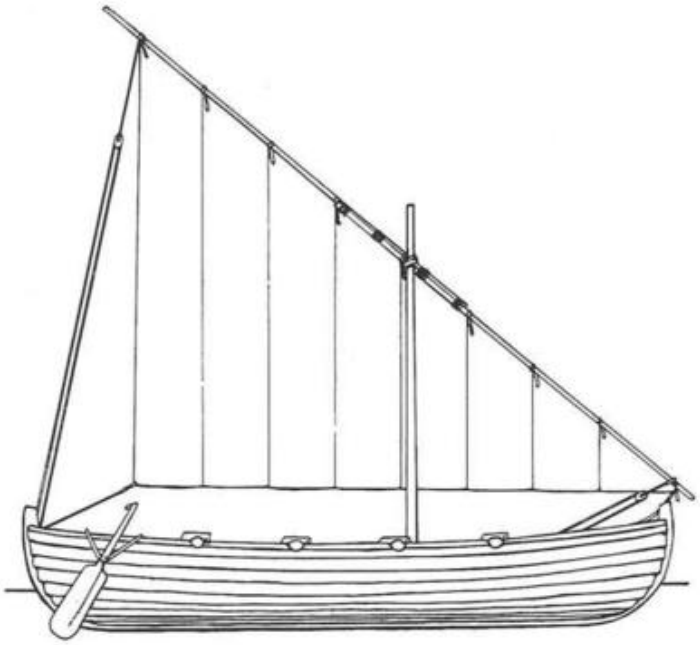
The following section describes and illustrates the most common vessel types found in western Lythia. Included in order are:

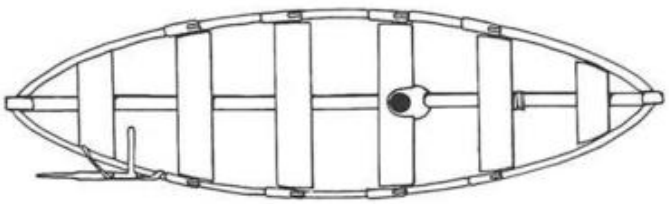
Pinda	Lifeboat, dingy, skiff, etc.
Talbar	River or canal boat.
Nivik	Harnic/Ivinian knarr.
Dragonship	Ivinian warship.
Dak	Shorkyne cog.
Karune	Trierzi carrack.
Venar	Azeryani merchantman.
Raem	Karejian merchantman.
Laru	Azeryani war galley
Larumar	Karejian merchant galley.

A data base is given for each vessel type in a range of sizes. This data may be used to fill out a Vessel Profile (ie. coppied directly) or a custom built vessel may be generated using the *Shipbuilding* rules which follow this section.

PINDA

Small, deckless boats, equipped with oars, and carried by ships as lifeboats, tenders for shore parties, kedging boats, etc. A pinda will have 1-4 oars per side depending on its length and most have single steppable masts that are square or venyn rigged. Most large vessels carry at least one pinda, stowed on the maindeckor slung over the side. In terms of human capacity, a pinda can carry one man per 0.25 tuns Gross Burthen. Hence, a pinda of 2 tuns can hold about 8 men with provisions for about two days, assuming of course that it carries no other cargo.

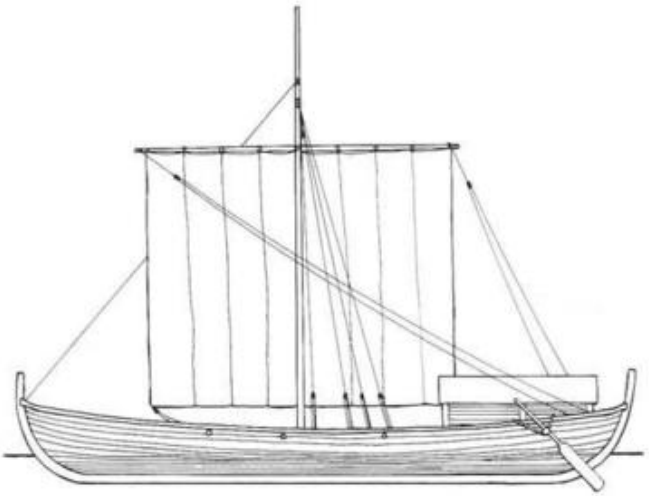


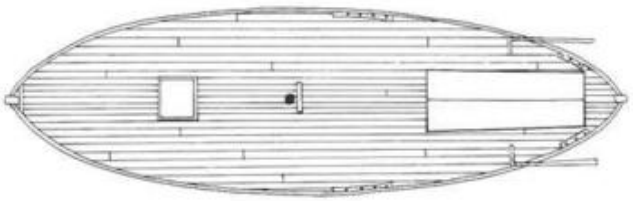


Length	12	15	18	21
Beam	5	6	7	8
Depth	2	2.4	2.8	3.2
Burthen	1.2	2.2	3.5	5.4
SG	C	C	C	C
OG	B	B	B	B
HF	75	75	75	75
TGT	56	56	56	56
RF	67	67	68	68
VCF	3	3	4	4
Time	72	112	162	220
Cost	432	675	972	1,323

TALBAR

A beamy but shallow draft trading vessel designed to operate on rivers or in shallow coastal waters. The Talbar dominates water transport on most navigable rivers and lakes. The overwhelming majority of Talbars are a few inches under thirty feet long to circumvent piloting restrictions. The Talbar hull may have clinker or carvel straking. They are both oar and sail powered. The oars are used primarily for upriver travel and docking. The small sail is bent on a steppable mast that can be easily lowered to pass beneath bridges, and may be square or venyn rigged according to local custom.



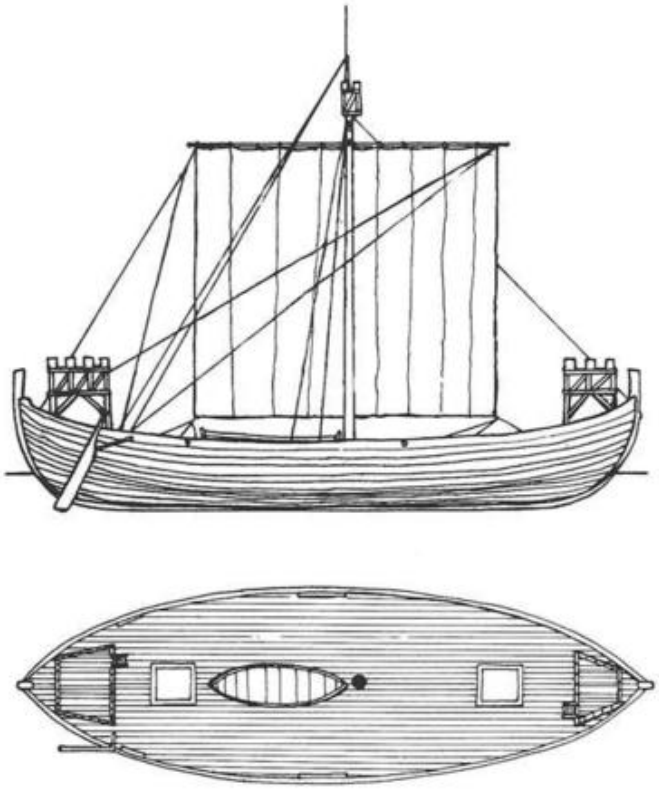


Length	24	30	36	42
Beam	9	11	14	16
Depth	3	3	4	5
Burthen	6	10	20	34
SG	D	D	D	D
OG	D	D	D	D
HF	60	60	60	60
TGT	56	57	57	58
RF	68	69	70	70
VCF	4	5	6	6
Time	384	600	864	1,176
Cost	2,304	3,600	5,184	7,056

SHIPWRIGHT 4

NIVIK

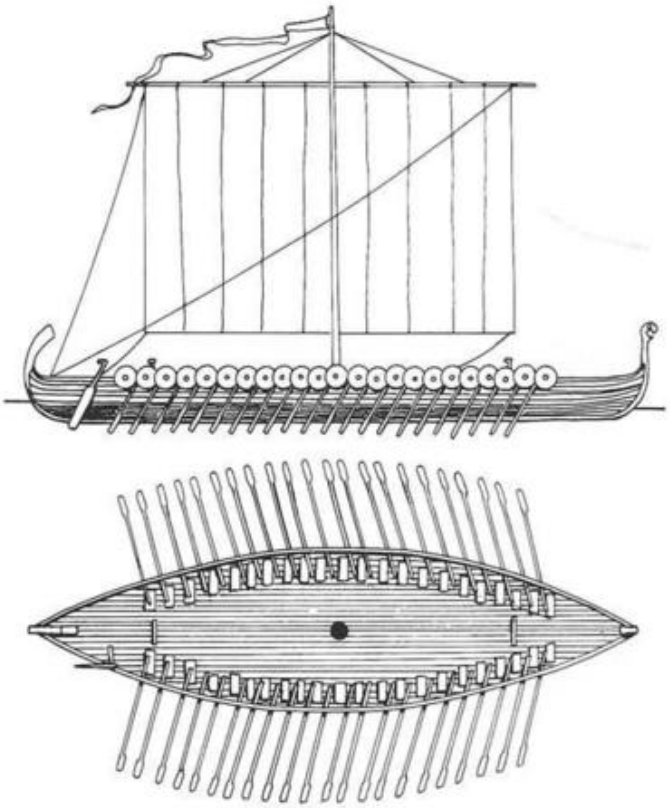
A one-masted, square-rigged vessel which is the most common merchant ship found in the waters of Harn and Ivinia. The Nivik has a clinker hull, a full orlop, but no main deck. Cargo and men are protected from the elements by tarpaulins and canopies. A single square sail is the only source of propulsion, and there is a single steering oar on the starboard quarter. A coastal trader would typically have a length of 30-42 feet, a sea-going trader might vary between 42-60 feet in length. Niviks of 24-30 feet are the most common fishing boats in northwestern Lythia. When employed for military use, small raised platforms called castles may be added at the bow and stern as per illustration. The castles are temporary, easily added or removed.



Length	24	36	48	60
Beam	8	12	16	20
Depth	4	6	8	10
Burthen	8	26	61	120
SG	C	C	C	C
OG	--	--	--	--
HF	65	65	65	65
TGT	57	58	58	59
RF	68	69	70	71
VCF	4	6	7	8
Time	480	1,080	1,920	3,000
Cost	2,880	6,480	11,520	18,000

DRAGONSHIP

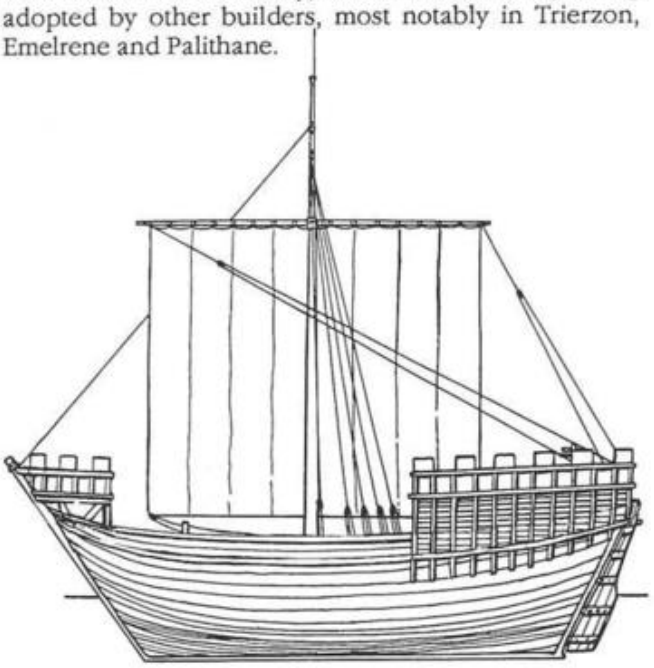
A collective name for all types of the traditional Ivinian warship, although the name is sometimes reserved for the largest of them. The smallest type is called a *Warboat* (60-80 feet), and this is followed by a *Longship* (81-96 feet). Dragonships have evolved from a long and violent maritime tradition, and depend on their large crews for seaworthiness. They are built with shallow draft clinker hulls, and orlop decks. They never have more than one square-rigged mast, but are capable of making up to twelve knots with a good following wind, and six knots under oar. Crews are large; all bear arms and help sail, row, and fight. Cargo capacity is minimal, restricted to small valuable items such as might be acquired by raiding. These vessels rarely have benches for their oarsmen, the tradition being that each oarsman sits on his personal sea-chest when rowing.

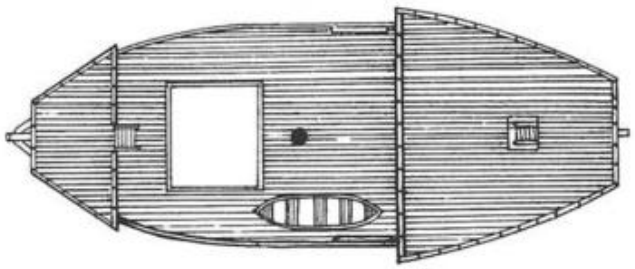


Length	60	80	100	120
Beam	12	16	20	24
Depth	5	6	8	10
Burthen	36	77	160	288
SG	B	B	B	B
OG	C	C	C	C
HF	75	75	75	75
TGT	57	57	58	59
RF	74	75	77	78
VCF	8	10	12	14
Time	3,600	6,400	10,000	14,400
Cost	21,600	38,400	60,000	86,400

DAK

The Dak has replaced the Nivik as the most popular merchant vessel in Shorkyne, Emelrene, and Trierzonthe west. Built from a clinker staked hull, this vessel has a full length orlop and main deck, and may have a tween deck depending on size. The Dak also has a quarterdeck and forecastle, although recent designs now have a enclosed focsles. Most have single square rigged masts. The vessel is slow and unwieldy but very seaworthy because of its high freeboard. An important feature of the Dak is her stern post rudder which is far superior to a steering oar, particularly in rough seas. Invented by Shorkyni shipwrights in the middle of the last century, the rudder is slowly being adopted by other builders, most notably in Trierzon, Emelrene and Palithane.

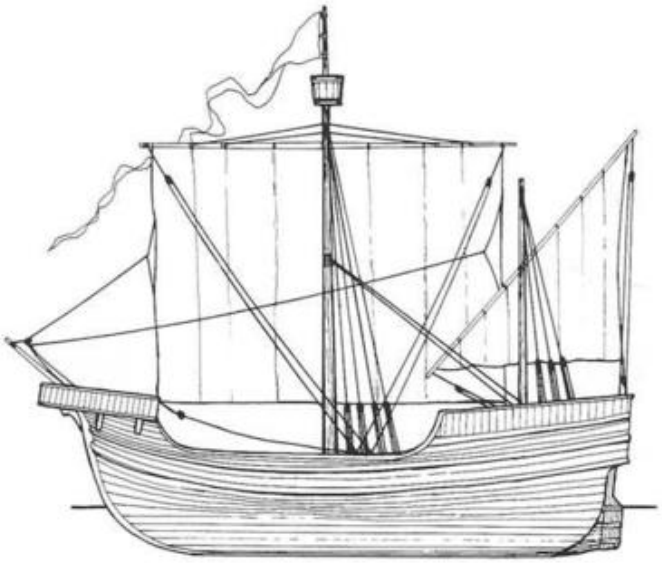


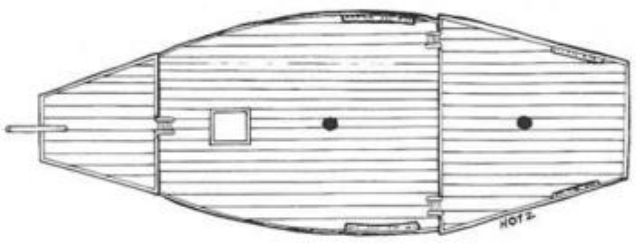


Length	48	60	72	84
Beam	19	24	29	34
Depth	10	13	16	19
Burthen	91	187	334	543
SG	D	D	D	D
OG	--	--	--	--
HF	70	70	70	70
TGT	76	78	80	81
RF	71	73	75	76
VCF	7	8	11	12
Time	2,688	4,200	6,048	8,232
Cost	16,128	25,200	36,288	49,392

KARUNE

A revoluntionary new design which first appeared in Trierzon and Palithane less than thirty years ago. The Karune is an all-purpose vessel intended for long voyages and capable of handing all but the roughest seas. Ranging in length from 60-96 feet, the Karune may have carvel or kamba straking, an orlop deck, one or two tween decks, a maindeck, and a focsle and quarter deck. The Karune has two or three masts, with square, venyn or, most often, mixed rigging. Compared to a Dak of similar size, the Karune has less cargo capacity due to her slimmer lines, but is faster. There are only about sixty of these vessels afloat, partly because of their significant cost, partly because shipwrights elsewhere have been slow to adopt the design.



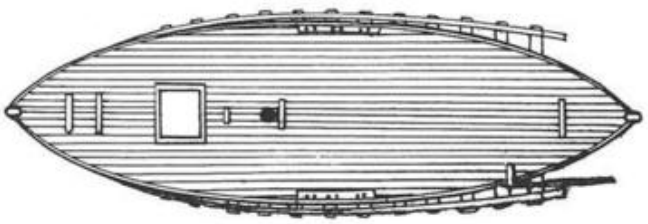


Length	60	72	84	96
Beam	22	26	30	35
Depth	11	13	15	17
Burthen	145	243	378	571
SG	C	C	C	C
OG	--	--	--	--
HF	65	65	65	65
TGT	77	79	80	82
RF	67	69	70	72
VCF	11	12	15	17
Time	4,800	6,912	9,408	12,288
Cost	28,800	41,472	56,448	73,728

SHIPWRIGHT 6

VENAR

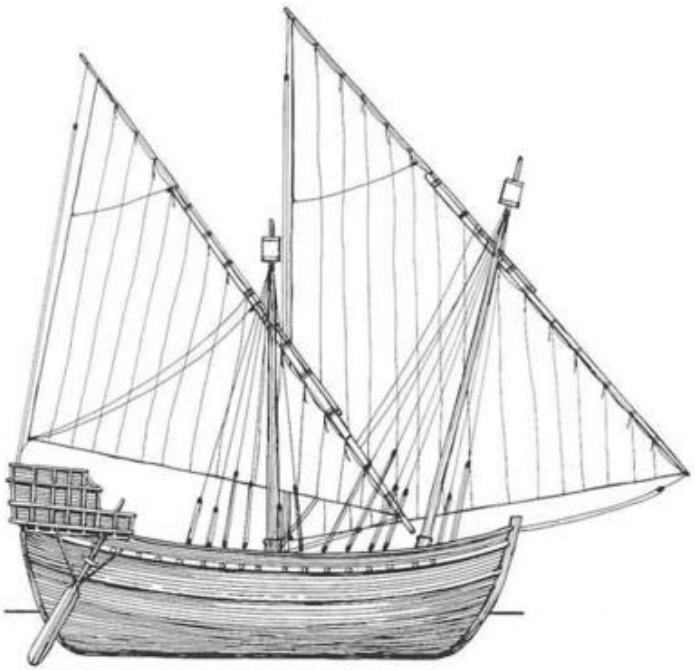
A one masted, carvel-straked venyn-rigged vessel with a single steering oar. The sail design was adopted from eastern Lythia and the rig is now named after this vessel, which in turn is named after the sea on which it is most common. Smaller Venars serve as fishing boats and light river transport; larger Venars are employed as coastal traders. The Venar generally has an orlop deck, but no main deck; it is not very seaworthy in stormy seas.

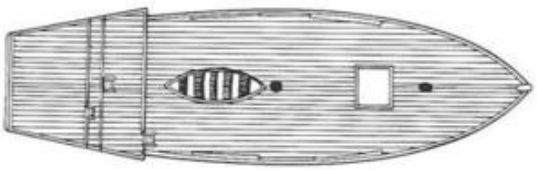


Length	24	36	48	60
Beam	8	12	16	20
Depth	4	6	8	10
Burthen	8	26	61	120
SG	C	C	C	C
OG	--	--	--	--
HF	55	55	55	55
TGT	57	57	58	59
RF	58	59	60	62
VCF	5	7	8	9
Time	384	864	1,536	2,400
Cost	2,304	5,184	9,216	14,400

RAEM

A merchant vessel used extensively by Azeryani and Karejian traders. She is carvel straked, with two masts and twin steering oars. Both masts are venyn rigged. The twin steering oars, one each quarter, provide better steering when the vessel heels to one side or the other. The Raem has a high freeboard, full length orlop and main decks, and a poop deck. The Raem is very seaworthy and capable of ocean travel.





Length	48	60	72	84
Beam	17	22	26	30
Depth	9	11	13	15
Burthen	73	145	243	378
SG	D	D	D	D
OG	--	--	--	--
HF	60	60	60	60
TGT	69	69	70	71
RF	61	62	63	65
VCF	11	12	13	14
Time	1,920	3,000	4,320	5,880
Cost	11,520	18,000	25,920	35,280

LARU

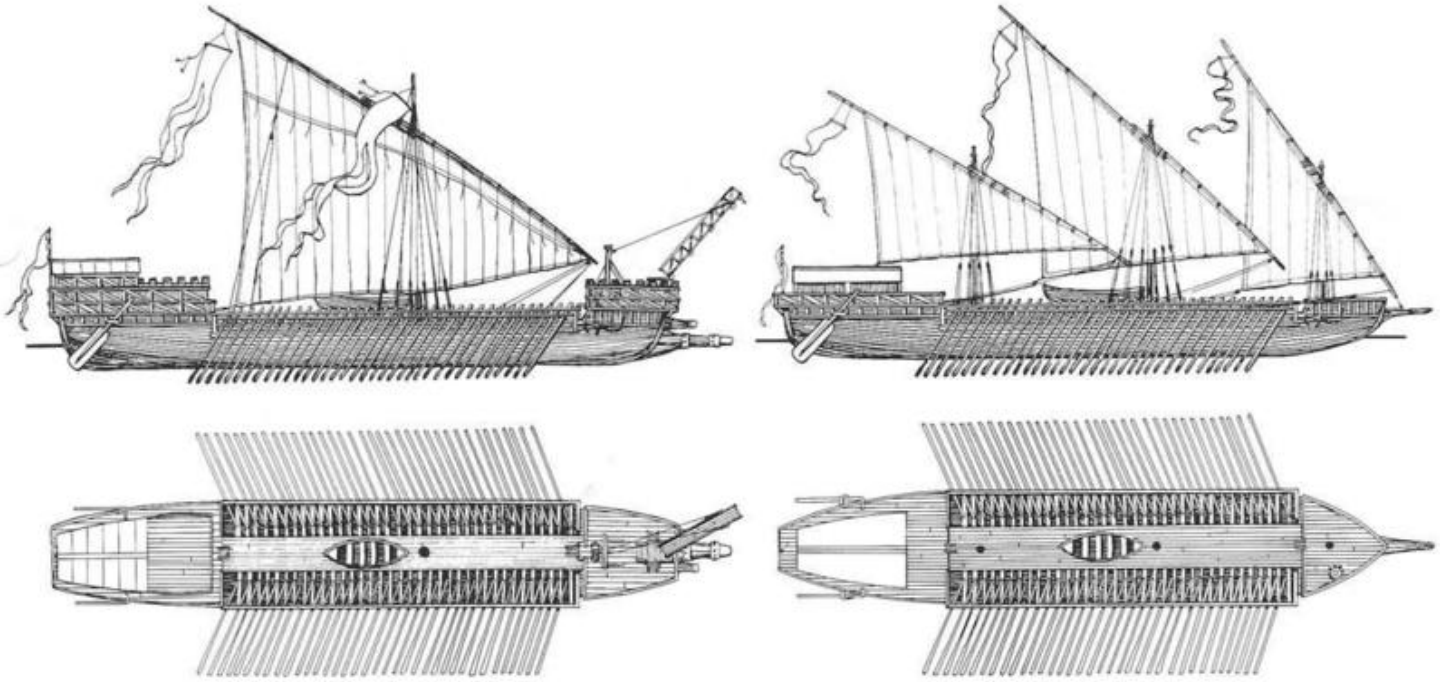
The war galley of the central and eastern Venarian Sea. The Laru has a low, sleek profile, a ram, and is propelled by a large venyn sail bent on a single mast and by oar. She has a full orlop-deck, and partial main-decks at the bow and stern, linked by a narrow deck (called a catwalk). Most also have quarterdecks and focsles, and carry 20-30 bowmen. Oarsmen are positioned two or three to a bench, pulling single 24-36 foot oars in unison. Depending on the vessel size there are 12-36 oars per side.

Cruising speed under oar is four knots, although twice this speed is possible for 15-20 minute bursts. The vessel can make 8 knots with a good following wind, but is vulnerable to rough seas. The Laru is mainly employed to protect merchant convoys and to patrol the sea-lanes and coastal waters, usually in flotillas of 2-6 vessels.

LARUMAR

A merchant galley used by wealthy Karejian and Azeryani merchants, generally only for valuable cargoes. The Larumar is fast and relatively seaworthy for a galley. Her hull may have carvel or kamba straking. She has an orlop deck, maindeck, and (usually) a deck house atop a quarter deck. Such vessels may have two or three venyn-rigged masts, They carry large crews which are more for defence than rowing because they only use oars only when becalmed or entering/leaving a port.

These elite merchant ships rarely travel alone, convoys of 2-8 vessels, comprising a *Larun* being more common. Most Larun originate in Livelis, the major port/city of the Karejian League, and are named after their principal destination such as the Larun of Hebos, the Larun of Janora or the Larun of Cherafir.



Length	60	90	120	150
Beam	12	18	24	30
Depth	5	7	10	12
Burthen	36	113	288	540
SG	C	C	C	C
OG	B	B	B	B
HF	60	60	60	60
TGT	57	58	59	60
RF	59	61	63	65
VCF	9	12	15	18
Time	3,000	6,750	12,000	18,750
Cost	18,000	40,500	72,000	112,500

Length	60	90	120	150
Beam	15	23	30	38
Depth	6	9	12	15
Burthen	54	186	432	855
SG	C	C	C	C
OG	C	C	C	C
HF	55	55	55	55
TGT	67	68	70	71
RF	60	63	65	68
VCF	9	12	18	24
Time	3,600	8,100	14,400	22,500
Cost	21,600	48,600	86,400	135,000

SHIPWRIGHT 8

SHIPBUILDING

It is the ambition of most seagoing characters to have unique vessels. The shipbuilding routine involves customization of one of the ten basic vessel types, and involves five steps as noted below:

1. Design the vessel
2. Build and launch the hull
3. Install masts and rigging
4. Outfit and Equip the vessel
5. Shakedown

Reasónable familiarity with all maritime routines is necessary for anyone contemplating the building of a ship.

[1] DESIGNING THE VESSEL

Ten basic designs are available as noted on the **Vessel Data Table.** Each type has a different beam to depth ratio and varying basic factors. It may take several trial designs before the builder has an affordable and/or desirable vessel. As the vessel is designed, pencil each generated datum on the Vessel Profile; it may be adjusted later.

Vessel Type

Selection of vessel type depends on her intended purpose. If maximum cargo capacity is required, a high beam factor (BF) is important. If speed is desired, a high *Sailing Grade* (SG) is more critical.

Length & Masts

Select the vessel's length from the range given for the type and number of masts desired. With most vessels, the number of masts is limited, and length establishes how many masts she must carry. Hence, any Dak 65-84 feet in length must have two masts.

Most river vessels are 18 to 30 feet, most coastal vessels are 24-48 feet, and most sea-going cargo ships are over 45'. Among other things, vessel length controls beam, depth, draft, time to build, and cost.

Time & Cost

To determine whether the vessel will fit within the owner's budjet, the shipwright can now give an estimate of the basic time (mandays) and cost (pence) to build the vessel. The baic cost of a vessel is her length *squared* times the pence indicated in the cost column. For example, a 60 foot Dak would have a basic cost of 60 x 60 x 7d = 25,200d. The number of mandays required to build any vessel is one *sixth* of her cost, 4,200 mandays in the case of the Dak above. Record the basic Time/Cost numbers on the *Vessel Profile* under **Total Mandays** and **Vessel Cost.**

Note: these time/cost figures can increase as a result of some design and outfitting options noted later. In addition, they do not yet allow for the shipwright's profit and efficiency as descibed later under *Job Time* and *Job Cost*. The final Time/Cost on a vessel can double, so if they look too high at this stage, the builder should design a more modest vessel.

[2] BUILDING THE HULL

Determine and record the following basic data on the Vessel Profile.

Beam/Height

Beam = Length x Beam Factor rounded to the nearest foot. For example, the beam of a 60' Dak would be 60 x 0.40 = 24 ft. Vessel **Height** is Beam x 3.

Depth

Depth = Beam x Depth factor.

Draft, and Freeboard

Draft (loaded) is 60% of depth, and **Freeboard** is Depth minus Draft.

Gross Burthen

Gross Burthen = Length x Beam x Depth, divided by 100, measured in tuns. Hence, a Dak of 80' length would have a beam of 32' (80 x 0.4) and a depth of 18' (32 x 0.55). Her Gross Burthen is therefore, 80 x 32 x 18, divided by 100, or 461 tuns.

VESSEL DATA TABLE

Vessel	1-mast	2-mast	3-mast	BF	DF	ST	SG	OG	HF	TGT	RF	Cost
Dak	48-64	65-84	n./a	.40	.55	R	35s	--	70*	70	65	7d
Dragon	60-120	n/a	n/a.	.20	.40	S	80s	70	75*	55	65	6d
Karune	n/a	60-79	80-96	.36	.50	R	55m	--	65	70	60	8d
Laru	60-150	n/a	n/a	.20	.40	S2	70v	85	60	55	55	5d
Laru-Mar	60-90	91-120	121-150	..25	.40	S2	60v	65	55	65	55	6d
Nivik	24-60	n/a	n/a	.33	.50	S	60s	--	65*	55	65	5d
Pinda	12-21	n/a	n/a	.40	.40	S	65c	80	75*	55	60	3d
Raem	n/a	48-84	n/a	.36	.50	S2	55v	--	60	65	55	5d
Talbar	24-42	n/a	n/a	.38	.30	S	50c	50	60*	55	60	4d
Vena	24-60	n/a	n/a	.33	.50	S	60v	--	55	55	55	4d

BF-Beam Factor; **DF**-Depth Factor; **ST**-Steering; **SG**-Sailing Grade; **OG**-Oar Grade; **HF**-Hull Factor; **TGT**-Tightness; RF Rigging Factor
* Clinker-straked hull. All others are carvel built.

Steering
Read directly from the **ST** column: Rudder (R), Steering Board (S), or Double Steering Board (S2).

Sailing Grade
Sailing Grade depends mainly on hull shape (hull speed). Up to a point, the slimmer the hull, the higher the SG, but very shallow hulls do not sail as well. The code following the ratings refer to the type of rigging normally carried, Square (s), Mixed (m), Venyn (v), or Choice (c) of Square or Venyn.

Oar Grade
Oar Grade also depends on hull speed. Some designs are not practical for rowing and are not rated.

Hull Factor
The basic strength of the vessel's hull, identified as *clinker-built* with an asterisk (*) All others are carvel built. A design option for all vessels is to Kamba strake the hull. This will improve HF +10, but adds 20% to Time and Cost.

Tightness
Increase the Tightness given by Freeboard.

Launching
The hull is now completed and the vessel would normally now be launched before the rigging and outfitting steps are done. The date of launching would be approximately 70% of the total time to date.

[3] RIGGING THE VESSEL
The type of rigging (square, mixed, or venyn) normally associated with a vessel type is given under her sailing grade. This may be changed at GM discretion, but note that RFs are dependent on the rigging type; Square is strongest, followed by Mixed, and then Venyn.

Rigging Factor
The basic RF of a vessel is the number given on the Vessel Data Table, plus **one third** of the vessel beam. This reflects that beamy hulls have greater stability and can support taller, sturdier masts.

Mast Woods: the standard woods used for masts/spars are pine and spruce. This may be upgraded to fir, which will give +5 to RF, but will add 5% to the vessel cost. Time is unchanged. Hardwoods such as oak are never used; they are too rigid.

[4] OUTFITTING
This stage of shipbuilding involves dividing up the interior of the vessel into compartments, namely crew quarters, cabins, storerooms, etc. The Net Burthen of a vessel will be her Gross Burthen minus the tunnages devoted to these spaces.

GM Note: *some captains will want to devote minimal space (if any) for lockers and storerooms, and seek to carry additional provisions and stores as general cargo. This means stowing these items in the hold or carrying them as deck cargo. Obviously, opening the main hatch for access to hold supplies in rough weather is very dangerous and justifies a severe Weather Hazard penalty. Provisions and supplies stowed on deck are also more suceptible to theft/damage, which the GM should take into account as relevant.*

Crew Quarters
Even if no cabins are built, each man aboard requires a **minimum** of one half tun of living space. This assumes one quarter tun (roughly 6' x 2' x 2') of physical space for the man and a quarter tun for personal effects, including one liberty chest and one sea chest. The basic vessel time/cost *includes* building crude accomodations for her rated crewat 0.5 tuns per man. Record this number under Crew Quarters in the Burthen section of the Vessel Profile.

Note: *the rated crew of a vessel is equal to VCF x 2. (See CREW 7).*

Cabins (optional)
Officers and paying passangers generally rate more comfortable living space. At a minimum, the captain would require a one berth cabin, and most sea-going vessels would also have cabins for the pilot and mate. These are not included in the basic time/cost of the vessel, but may be added at the owner's discretion.

Cabins of one to four berths (bunks) are most common. The tunnages, mandays, and costs given are minimum allowances. If any degree of luxury is desired, they should be doubled or tripled.

Berths	Tuns	Time	Cost
1	2	20	120d
2	3	30	180d
3	4	40	240d
4	5	50	300d

Each cabin should be entered on the Vessel Profile with its number of berths and tunnage. It is also helpful to note the occupants. For example, Cabin 1 might be noted as Captain, 1 berth, 2 tuns; Cabin 2 as Pilot and apprentice, 2 berths, 3 tuns, and so on.

While it would be unusual for common deckhands to be given cabins, a vessel with them would certainly attract better quality seamen and their morale would be higher. Total any cabin tunnages and adjust the tunnage of Crew Quarters as necessary.

Provision Lockers (optional)

On most vessels, food and water is kept under lock and key in special storerooms. These are **not** included in the basic time/cost.

Even if no lockers are built, each manday of provisions occupies roughly one cubic foot, hence 100 mandays require one tun of space. To determine the tunnage of provision lockers, total the mandays of provisions to be carried, and divide by 100.

Example: *in a vessel with 20 crew, provisions for 20 days would be 400 mandays. The tunnage of provision lockers to hold them would be 4 tuns.*

Record the tunnage of provision lockers in the Burthen section. The Time/Cost for building them is 8 mandays and 48d per tun.

Storerooms (optional)

Spares may be carried as general cargo, stowed in whatever nooks and crannies are available, but to minimize damage/theft it is a good idea to build storerooms to keep them secure. The basic vessel time/cost does **not** include any storerooms.

The tunnage of each spare (even if no storerooms are built) is one tenth of a tun. Hence, the number of spares carried divided by ten will indicate the tunnage of storerooms required. As a general guide, most vessels carry one spare per ten tuns of Gross Burthen, but more or less may be carried. Enter tunnage allocated in the Burthen section. The Time/Cost to build storerooms is 6 mandays and 36d per tun.

Pinda (optional)

Most vessels carry at least one pinda (ship's boat) but they are not included in the basic vessel Time/Cost. The size and number of pindas carried is at the discretion of the captain. The capacity of each pinda should be recorded under notes, and their tunnages as an "other" in the Burthen section. They are usually stored on the main deck.

Anchors

One anchor is included in the basic time/cost of the vessel, but most vessels will carry two and even a third as a spare. The size of an anchor is dependent on vessel size. Each anchor (and its cable) would cost roughly 1d per tun of Gross Burthen. That is, an anchor for a 300 tun vessel will cost 300d. Each anchor carried reduces Gross Burthen by 1%. Record how many anchors are aboard, and their tunnage as an "other".

Slave Shelves

While slaving is illegal in many regions someone may wish to carry humans in this way. Each slave berth requires a quarter tun of burthen. Time/Cost to install is 7 mandays and 42d per tun.

Troop Transport

Some owners will wish to outfit a vessel to carry marines or merely to transport troops. The space this takes may be set as one tun per man, and three tuns per horse. This allowance includes personal weapons, but not provisions. The Time/Cost to build reasonable troop quarters is 8 mandays/48d per tun.

Castles (optional)

Temporary fighting platforms installed at the bow (forecastle) or stern (sterncastle). These are not generally built on vessels which already have a raised fo'c'sle or quarterdeck. A forecastle and/or sterncastle may be installed; a forecastle is never installed by itself. Each castle takes approximately three percent (2%) of Gross Burthen and the Time/Cost to install is 5 mandays/30d per tun.

Other Allowances

No matter how many options we included, some player-character would think of one we had left out. Various other installations, such as catapults or arrow engines are certainly possible. They are mostly left to GM discretion; just keep in mind that one tun equals 100 cubic feet of space or 2000 pounds.

NET BURTHEN

Once all burthen allowances are made, net burthen may be calculated by subtracting their tunnages from gross burthen. Net burthen is the vessel's cargo carrying capacity.

JOB TIME

Thus far, all time requirements have been expressed in mandays. The actual time a shipyard will take to complete a job will depend on its size and efficiency. Once the total mandays are known, divide by shipyard size (see Port Almanac). Then roll on the **Shipwright Skill Table** (next page) and *divide* by the Skill Multiple generated. This means that better yards will tend to work faster, and poorer yards will work slower.

Once the Job Time has been (secretly) generated by the GM, the date of completion can be calculated. The purchaser will not necessarily know the actual date of completion until it has almost arrived.

JOB COST

The price demanded by a shipwright for his work is **not** equal to the job cost so far described. This is only the cost of labour and mateterials and does not include the shipwright's profit. To determine his average selling price, multiply job cost by the Cost Factor (CF) given in the *Port Almanac*. Hence, if total cost is 21,600d, and the CF is 1.25, the average selling price at this yard would be 21,600d times 1.25 which equals 27,000d. This price is negotiable.

GM Note: *shipbuilding is labour intensive. Cost figures given assume that the cost of labour (an average of 3d per day) is half the vessel cost, the materials being the other half. Hence, dividing cost figures by six is a rough guide to the number of mandays for any project.*

[5] SHAKEDOWN

No two vessels are identical, even when they are built from exactly the same plans in the same yard. Many of the vessel's factors cannot be exactly known until after she puts to sea on her first voyage, her *shakedown*.

Immediately after commissioning, when the new owner takes possession, the following factors are randomly varied according to the shipwright's skill: Hull Factor, Tightness, Rigging Factor, Sailing Grade and Oar Grade.

Each or these factors should be multiplied with a Skill Multiple generated with the Shipwright Skill Table.

Shipwright Skill Table

To use this table roll against shipwright ML and cross-index the success level attained with the shipwright's Skill Index (one tenth of ML rounded down). This produces a **Skill Multiple.**

Index	CS	MS	MF	CF
0	0.50	0.27	0.00	0.00
1	0.60	0.39	0.00	0.00
2	0.69	0.50	0.14	0.00
3	0.87	0.60	0.27	0.00
4	0.94	0.69	0.39	0.14
5	1.00	0.87	0.50	0.27
6	1.05	0.94	0.60	0.39
7	1.10	1.00	0.69	0.50
8	1.15	1.05	0.87	0.60
9	1.19	1.09	0.94	0.69
10	1.22	1.12	1.00	0.87
11	1.24	1.14	1.05	0.94
12	1.25	1.15	1.09	1.00

EXAMPLE: *The HF of a vessel is 74. The Shipwright Mastery Level (ML) is 85, hence his skill index is 8. He rolls MS (Marginal Success) and cross-indexing this result with a skill index of 8 gives a factor of 1.05. Hence the final HF of the vessel is 74 x 1.05 = 77.7 which is rounded off to 78. The same routine would then be followed for each of TGT, SG, OG, and RF.*

Optional: If the shipwright wishes to improve on his work, he may make additional rolls by increasing the cost and time to build by ten percent (compounded) for each roll.

INITIALIZING FACTORS

At this point, all of a new vessel's Basic Factors have been generated and should have been entered on the Vessel Profile.

Hull, Tightness & Rigging Factors

Regardless of design options taken, or success in the shipwright roll, the maximum level for Hull, Tightness, and Rigging factors is 95, and the minimum is 05.

Set all Damage values at zero, except Tightness Damage which should be set at 1d30; new vessels are always a bit leaky. Set all current factors at Basic minus Damage. Except for Tightness, Basic will equal Current. A current factor is *always* equal to Basic minus Damage.

Sailing & Oar Grades

SG and OG are converted to letter codes as follows: (eg. a vessel with a sailing grade of 81, has a sailing grade of B). Record the number as well for future reference.

Numerical	01-30	31-55	56-75	76-90	91+
Letter	E	D	C	B	A

REFITTING

All of the outfitting options noted earlier may also be done at a later date as refits. It often occurs that a ship owner will want to add more cabins, or convert all or part of his cargo hold to carry troops or slaves.

The Time/Cost of refits are difficult to assess and must largely be left to GM discretion. In some cases a refit will be able to reuse materials, or all new materials will be required, and some may require removing old materials first. Generally any refit will take longer and cost more than they would have at the outfitting stage, at least 25% more and up.

Example: *an owner wishes to convert 50 tuns of his cargo hold to carry troops. The normal outfitting cost of this is 8/48d per tun. At outfitting, the time/cost for this job would be 400 mandays and 2,400d. This is a relatively easy conversion, and the GM feels that +25% for the refit would be fair, so this refit has a time/cost of 500/3,000d. The job time and shipwright profit adjustments are then made to arrive at a total time/cost for the refit.*

SHIPWRIGHT 12

SHIPYARD REPAIRS

Repairs eliminate all or part of accumulated damage to Hull, Tightness or Rigging Factors. Repairs at sea are covered on **Crew8.**

Repairs in a shipyard are handled in much the same way as repairs at sea. The essential difference is that the shipwright ML of the yard (see Port Almanac) is used instead of the crew rating. The number of repair rolls that can be made this watch depends on how large and busy the yard is. This may be randomly determined; roll 1d20 and add yard size:

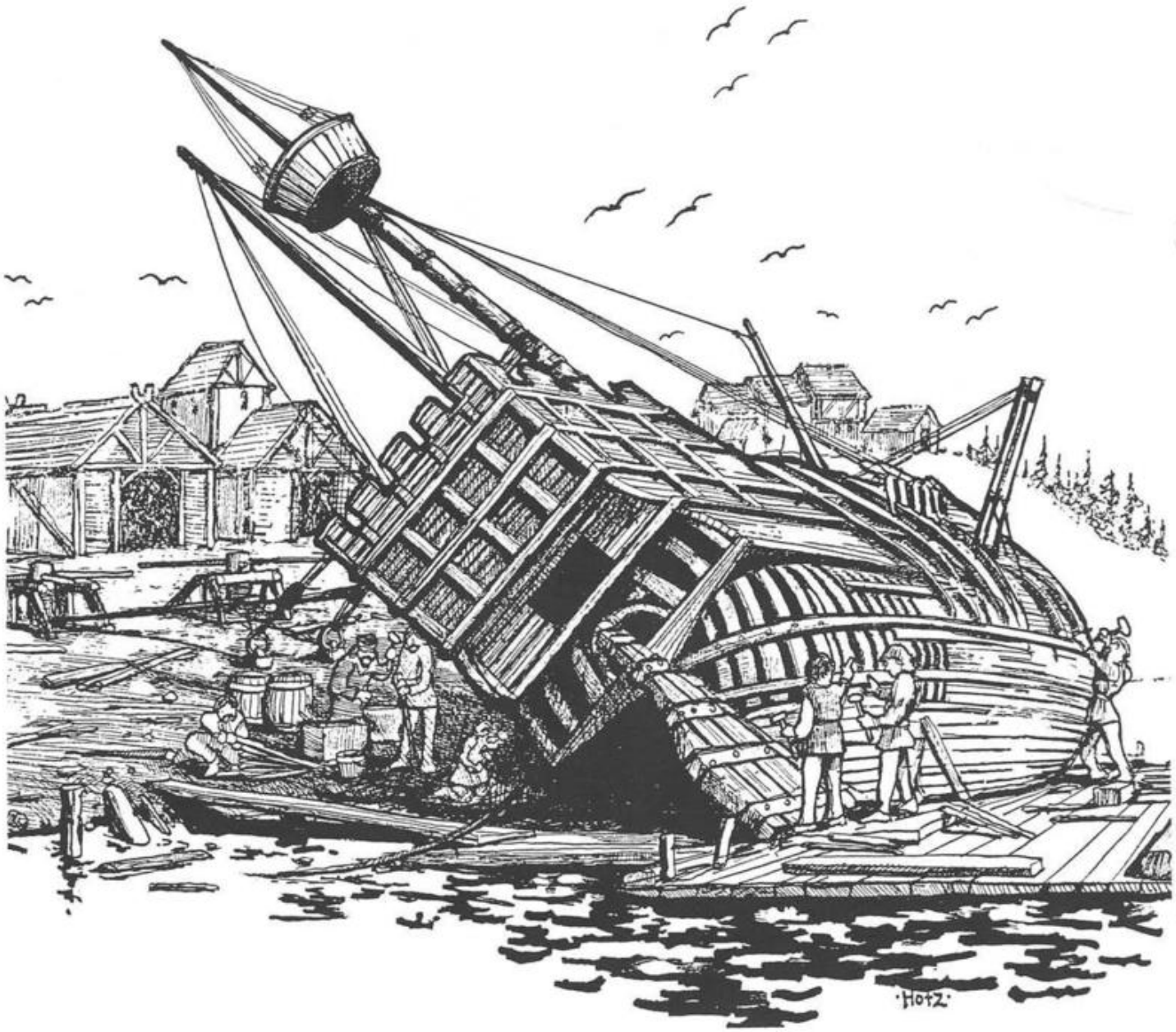
01-15	No repairs
16-24	One repair
25-30	Two repairs
31+	Three repairs

In any watch, the GM makes the rolls. Given the high MLs, most rolls will be CS/MS, the occasional failure just means time is lost. When making hull and/or tightness rolls, it also takes one watch to careen the vessel before repairs can commence.

Cost of Repairs

The shipwright will charge 100d times the vessel repair factor times his cost factor to repair each point of hull. He will charge two thirds of this for each point of Tightness, and one third for each point of Rigging.

Example: *the shipwright repairs five HF, his Cost Factor is 1.5, and the vessel repair factor is 2. He would charge 100d x 2 x 1.5 = 300d for each point, a total of 1,500d. The same repair (five points) to Tightness would cost only 1,000d, and 500d for Rigging .*



MARITIME TRADE

In most of western Lythia, medium and long distance movement of goods is more commonly done by sea than by land. Roads are generally poor, and wheeled transport tends to be less efficient, costing roughly five times as much as moving the same distance by sea. Hence, even where the roads are good, most mercantylers ship their goods by water where possible.

Most maritime trade is conducted by thousands of independent merchantmen, voyaging here and there as cargo opportunities dictate. The vessels involved range from open decked Niviks with ten or twenty tuns of burthen to Karunes able to carry over 300 tuns.

Smaller vessels are often owned by their captains, likely individuals with successful maritime backgrounds as pilots or seaman. Larger vessels may also be owned by such men, but most belong to wealthy mercantylers and nobles, many of whom have never been to sea, or by trading syndicates.

TRADE GOODS

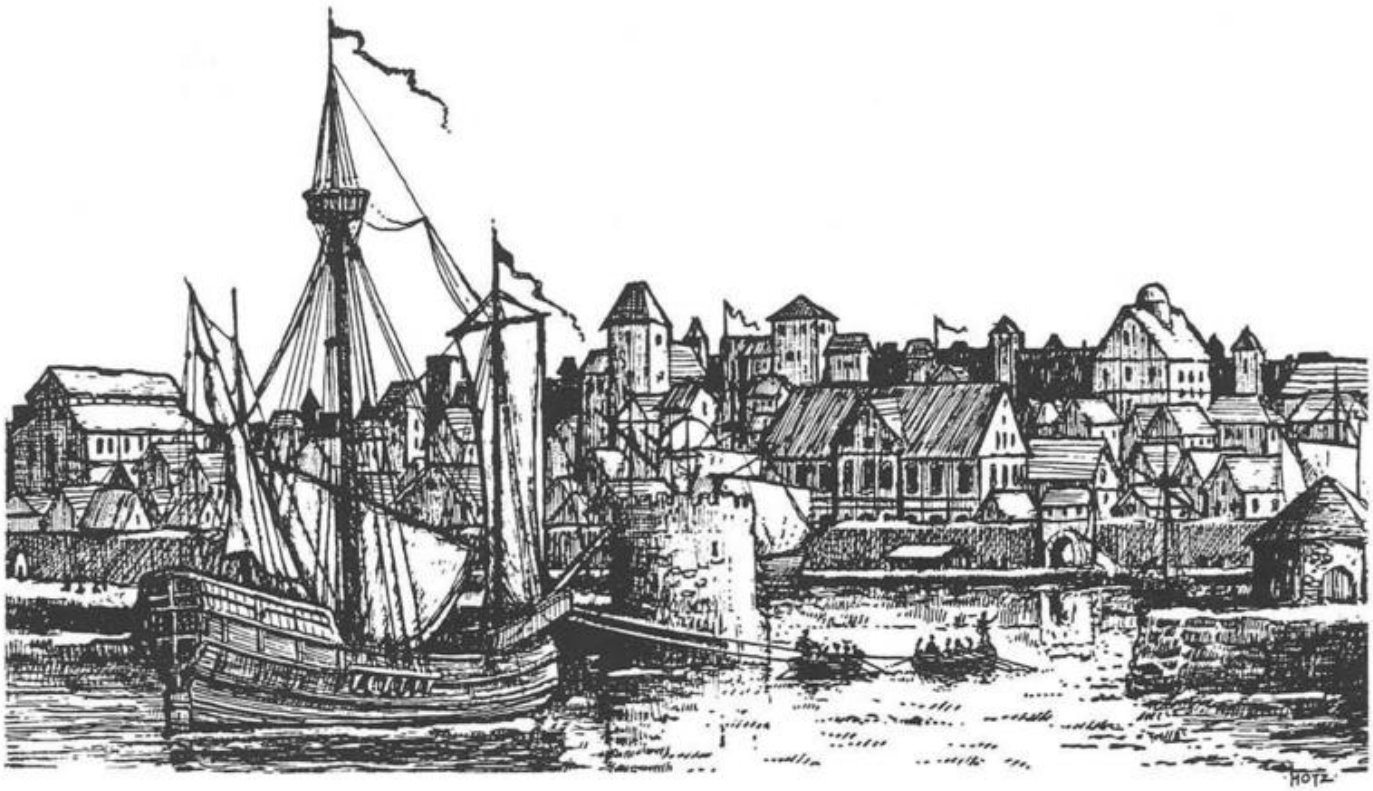
The variety of maritime cargoes carried is determined by supply and demand. Most rural settlements are self-sufficient and unable to support markets worth a large vessel's time. Very few settlements have to import food from further away than their immediate hinterlands; this kind of trade is carried by land or by short-haul river/coastal craft. Luxury goods, while they can be very profitable, are too expensive to fill a large hold. This means that most trade is in extra-regional commodities, products which are not locally produced, such as fruit, wine, spices, minerals and finished goods. The economic map in our ***Lythia*** module is the best source of such goods, most of which would be moved by long-haul trade

Maritime trade in the west is highly competitive, although it does tend to be dominated by colonial Ivinians in the North and by the Karejians in the Venarian Sea.

LARUN OF KAREJIA

Karejian merchants have minimized the risks of piracy with convoys of fast, well-armed merchant galleys called *Larun*. Most Larun originate in Livelis, the major port/city of the Karejian League. They are named after their principal destination such as the Larun of Hebos, the Larun of Janora, or the Larun of Cherafir. Larun make one or two voyages each year.

The Larun of Hebos is the largest and richest. About sixteen galleys, escorted by at least two war galleys, depart Livelis in the late spring carrying a fortune in luxury eastern goods for the Azeryani Empire. The Larun's arrival at Hebos is occasion for a local festival. The Larun of Cherafir, usually 2-3 galleys in size, arrives at Melderyn in mid-Peonu, eagerly anticipated by local mercantylers.



MARITIME TRADE 2

MARITIME TRADE ROUTINE

Trade is an exceedingly complex issue which can not be adequately covered in this module. Nevertheless, unless seafarers are to limit their activities to piracy and exploration, some provision for maritime trade is necessary.

The following guidelines provide a basic system for maritime trade from the point of view of the captain of a trading vessel. How to make deals and buy/sell cargoes are discussed in sufficient detail for most players. Those who want to immerse themselves in the minutae of international trade from a mercantyler's point of view, will, alas, have to await a planned trade and economic module.

CARGO CAPACITY

The cargo capacity of a vessel is her **Net Burthen,** measured in tuns. Net Burthen is the maximum tuns of cargo that a vessel can *safely* carry as cargo.

Overloading

Taking on cargo in excess of net burthen is a common but risky practice. The GM should penalize the *effective* **Hazard Factor** of an overloaded vessel. An appropriate penalty is **extra tuns** divided by **Gross Burthen** (not Net Burthen) multiplied by 100. Crew Routines may also be hampered by overloading.

CARGO LOTS

When a vessel enters a port, it will be approached by a number of mercantylers who have one or more lots they want transported. The number of lots available in any port on a given day is determined according to the port's Market Size from the **Supply & Demand Table,** under Supply Lots.

Example: *Silverfish enters Cherafir, market size 6. This means that 1d6-1 lots may be available. Assuming a roll of 2, one lot is available.*

Each lot should have a specific tunnage, value, and destination. The GM should generate and give the vessel captain a list of available lots for the day. The captain may accept or decline any/all lots as he wishes. Lots that are accepted are loaded and entered on the Cargo Manifest. Lots that are declined may still be available (GM discretion) on the following day when another list of lots is generated and offered to the vessel captain.

Cargo Identification

Although not essential to this system, the composition of any lot (amber, brandy, silk, wool, etc.) may be assigned by the GM after taking into account the tunnage, value, and destination of the lot, then examining the economic maps we have provided in our Lythia and regional modules. This will give a more realistic feel to the routine, but must be done with care because supply, demand, and price are inevitably intertwined with specific commodities.

Lot Tunnage

The tunnage of *each* lot is determined according to the port's Market Size from the **Supply & Demand Table,** under Supply Tuns. The number generated assumes that larger ports will have larger lots available.

Example: *An approach is made by Hagan of Jorgan to ship one lot from Cherafir. Since Hagan's lot is originating in a market whose size is 6, its tunnage is determined by rolling 1d12. The GM rolls an 11; Hagan's lot is 11 tuns.*

Lot Value

The value or buying price of a lot is determined by its size. Smaller lots tend to be comprised of more valuable goods, while larger lots tend to be bulk cargoes. The value **per tun** of any lot may be declared by the mercantyler or randomly generated with the **Value Table.** Roll the dice indicated for lot tunnage and multiply by ten.

Example: *For Hagan's Lot of 11 tuns, the GM rolls 4d6x10d. A roll of 18 gives a value per tun of (18x10d) 180d, hence the total value of the lot is (11x 180d) 1,980d.*

Supply & Demand Table

Market Size	Supply Lots	Supply Tuns	Demand Tuns
0	1d2-1	1d3	1d3-1
1	1d3-1	1d4	1d4-1
2	1d4-1	1d5	1d5-1
3	1d5-1	1d6	1d6-1
4	1d5-1	1d8	1d8-1
5	1d6-1	1d10	1d10-1
6	1d6-1	1d12	1d12-1
7	1d6-1	1d20	1d20-1
8	1d8-1	1d25	1d25-1
9	1d8-1	1d30	1d30-1

Value Table

Lot Tuns	Value per Tun
1	10d6 x 10
2-3	8d6 x 10
4-6	6d6 x 10
7-10	5d6 x 10
11-15	4d6 x 10
16-21	3d6 x 10
22+	2d6 x 10

Voyage Data Table

1d20	Voyage Name	Voyage Leagues	Price Multiple	Profit Claim
01-07	Local	1-100	10d2/10	150%
08-13	Short	101-300	8d4/10	200%
14-17	Medium	301-600	7d6/10	250%
18-19	Long	601-1200	6d10/10	350%
20	Maxim	1201+	5d20/10	500%

Lot Destination

The destination of any lot is always at GM discretion. It is presumed that the mercantyler bringing the lot aboard will have a good idea where to sell it profitably. He could, of course, be wrong. We have allowed for five general voyage lengths; Local, Short, Medium, Long, and Maxim. The GM may roll 1d20 on the **Voyage Data Table** to generate a voyage length, and then choose a specific port within this range.

Most mercantylers will make a profit claim which can be more or less than the average profit claim listed. Shorter voyages are the least profitable, but selling prices are also more predicable. The longer the voyage, the more profitable it can be, although big profits can turn into big losses.

Local Haul

Local voyages to a nearby port (within 100 leagues) such as from Cherafir to Thay, or Aleath to Golotha. Cargoes may be of any type, ranging from common goods of local surplus, to valuable goods that are being re-distributed throughout a region.

Short Haul

A voyage of 100-300 leagues, generally between ports with a market size of at least 3. Short Haul cargoes mostly consist of regional products in short supply at the destination port.

Medium Haul

A voyage of 300-600 leagues, generally only between ports of market size 5 or more. Medium-Haul cargoes nearly always consist of products available only from the source region.

Long Haul

A voyage of 600-1200 leagues, generally only between ports of market size 6 or more. Long-Haul cargoes tend to be exotic and valuable cargoes, such as glasswares, spices, amber, quicksilver, etc.

Maxim Haul

A voyage exceeding 1200 leagues, handled at GM discretion. Its a long way to Tiperari.

Note: one hex on the regional maps is 5 leagues, and one grid square is 25 leagues.

LET'S MAKE A DEAL

Unless a vessel has a supercargo (sea-going mercantyler) aboard, it is unlikely her captain will be able to buy and sell cargoes directly, at least not at prices likely to result in profits. Mercantylers are always reluctant to deal directly with non-mercantylers, although vessel captains who are members of the guild are not uncommon. If there is no mercantyler aboard, cargoes are generally transported on behalf of mercantylers, in return for some negotiated deal.

There is huge variety in the kinds of bargain struck between a mercantyler and vessel captain. The most common type of arrangement is **Fractional,** whereby the vessel carries the cargo in exchange for a share (usually 15-25%) of its **resale** value.

Example: *Hagan's Cherafir lot is worth 1,980d and is destined for Tarkain. He offers the vessel 19%, but the captain negotiates him up to 23%. If the cargo is sold at Tarkain for 4,500d, the vessel gets its fraction (4,500 x 0.23) 1,035d, and Hagan gets the balance of 3,465d.*

Patronage

Sometimes the mercantyler uses **patrons** (often the vessel) to help finance the deal, in effect, selling extra shares of the cargo.

Example: *Hagan finds a cargo worth 5,000d. He deals the vessel 20% for transportation, plus 20% for a 2,000d. investment. Hagan invests 1,000d of his own, and finds a usurer called Kasala willing to invest the remaining 2,000d for a 30% share. This means that the vessel owns 40% and Kasala owns 30% leaving Hagan with 30%. The cargo sells for 15,000d. The vessel's share is 6,000d, Kasala gets 4,500d, and Hagan is left with 4,500.*

The Vessel's Fraction

Operating expenses are usually paid out of the vessel's fraction. The vessel normally pays piloting, anchorage, wharfage and longshore charges. Those aboard due wages must be paid. before dividing up the balance among those who are due shares.

If a vessel captain is buying and selling cargoes directly, this of course means that the vessel's fraction is 100%. A guilded supercargo can also, if he knows the town, organize patronage. Outright purchase does tend to tie up significant portions of the vessel's capital, and an incompetent supercargo can produce bankruptcy with an alarmingly small number of lots.

The Mercantyler's Fraction

It is common practice for the mercantyler organizing the deal to be less than perfectly honest. When procuring investors, the mercantyler has a tendency to exaggerate the worth of the cargo, and may actually raise more investment than the overall purchase price. The mercantyler may also report less income from selling the cargo. In general, these practices are minimal, but do represent opportunities for a little extra profit. However, a mercantyler's good name is vital to his business; a reputation for dishonesty may drive off investors and shippers. In the final analysis, the mercantyler must make money for his investors, including the vessel. It is not uncommon for a mercantyler to take a loss, even when he does not have to, in order to insure investor profits.

MARITIME TRADE 4

SELLING A CARGO

Once the cargo has been moved to its destination, the captain will approach a mercantyler designated by the shipper who will then try to sell it. With valuable shipments, the mercantyler who organized the lot will usually accompany the vessel as a passenger and sell it himself. The seller must determine the local demand and then (perhaps in consultation with the vessel captain) decide whether or not to sell any/all of the lot.

DEMAND

When a cargo is delivered to its intended destination, the GM now randomly determines the number of tuns which the market can absorb and the local price per tun. Because each lot is presumed to have different composition, each is sold separately with its own rolls for demand Tuns and Price.

Demand Tuns

The number of tuns that the market will absorb is determined on the **Supply & Demand Table**; roll the die indicated under Demand Tuns for the market size. If a low or zero demand is generated, it may be assumed that the supply of the type of cargo involved has lately been good; some other vessel may have recently unloaded a similar cargo.

Example: *Hagan's 11 tun lot is delivered to Tarkain. Because Tarkain's market size is 6, the GM determines Demand Tuns by rolling 1d12-1. He rolls a 9, indicating an immediate demand for 8 of the 11 tuns.*

Selling Price

The selling price *per tun* is determined by generating a price multiple which is based on the length of the voyage. Roll the dice indicated on the **Voyage Data Table** for voyage length, divide the result by ten, and then use this factor to multiply the lot value.

Example: *Hagan's 11 tun lot, shipped from Cherafir to Tarkain (Medium Haul), would have a price multiple of 7d6/10. Assuming a roll of 25, the PM would be 2.5, and the selling price per tun would be 180d (value per tun) times 2.5, or 450d. per tun. Hence the 8 tuns that can be sold would provide revenue of (8x450d) 3,600d. After consulting with the vessel captain, Hagan decides that this price is fair and sells the 8 tuns.*

When there are unsold tuns in a lot, the investors have two options; take them to another port(s), or dump the goods in the current market. The first option needs little explanation, except that the voyage length for alternate ports may **not** change unless the distance from them to the *original* source port also changes. It is possible that the goods may be perishable or not suitable for any other port and must be dumped.

Dumping

It is generally possible to create additional demand for unsold tuns by dropping the price. If goods are to be dumped, drop the price by 20% (randomize 3d10% if desired) and roll for Demand Tuns again. The generated tuns may be sold at the reduced price.

Example: *Hagan decides to dump his surplus 3 tuns at Tarkain. He drops his price 20% from 450d to 360d per tun. Demand Tuns are rolled again generating 6 tuns. The remaining 3 tuns are sold for (3x360d) 1,080d. Total proceeds are therefore (3,600d + 1,080d) 4,680d.*

If after dumping, there are still leftover tuns, the demand price may be reduced again by an additional 20% (total of 40%) and another demand roll made. This may be repeated until the entire lot is sold off or the price is reduced to the point where it might be cheaper to dump the goods overboard than pay to unload them. Dumping is rarely profitable in small markets.

LONGSHORE OPERATIONS

The facilities for loading and unloading cargo are listed in the ***Port Almanac.*** Loading/unloading cargo may be done by the crew or by local longshoremen, who are available in most ports. In Ivinia, longshore urban clans fill the same economic niche. Longshoremen load/unload goods, and deliver to/from the bonding house or market. They are unguilded, but usually have a *de facto* monopoly. A typical longshoreman earns about 2d per day, although employment can be sporadic. Using longshoremen is optional, but generally desirable. Firstly, they minimize cargo damage. Secondly, crewmen take longer to do the job. Thirdly, unhired longshoremen may harass the crew, and if employed at a later date - things break dont they?

The typical longshore operation is run by a Boss, an ex-teamster or street tough with a wealth of connections and a ruthless personality. He may also run a teamstering operation. The Lia-Kavair is commonly involved in longshore operations. This gives them a handle on smuggling. A longshore boss may be a member of the Lia Kavair and his crew(s) may resemble street gangs. Where multiple longshore operations exist wharfside politics can be deadly, although rival gangs may make truces during which they will conspire to fix prices, and convince independents that other lines of work are safer.

The data given in the ***Port Almanac*** assumes longshoremen are hired. If the crew is used, eliminate the Cost per Tun charge, but use half the Tuns per Watch rate. Crewmen doing longshore work may also have "mysterious accidents".

PORT ENCOUNTERS

For *each* lot generated in a port, the GM may roll 1d100 on the following table. If the number is 21+, treat the roll as a regular cargo lot.

01-03 Cargo Inspection.

Officials board to inspect the cargo manifest. There is a 50% chance they will leave after a cursory inspection (a bottle of brandy might improve this chance) otherwise they will choose 1d3 lots at random, and there is a 10% chance (modified at GM discretion for actual vessel practice) that any of these lots will contain Contraband.

Contraband. The lot contains prohibited goods, or goods not listed on the manifest. At best the offending goods will be confiscated, but there may also be stiff fines imposed. In extreme cases, the captain and owners of a lot may be arrested, and the entire cargo and the vessel impounded. It is possible that the vessel captain is unaware of contraband in a lot, although generally he will be held responsible anyway. The principals may hire litigants and go to court, but this could be costly and time-consuming.

04-06 Charter Offer

A mercantyler, noble, explorer, or military officer, offers to hire a vessel outright for an agreed daily fee. Only the captain can decide what is a reasonable charter fee, but 6d-18d per tun of (net) burthen per day is typical. There is a 20% chance that any military charter is actually a mandatory requisition.

08-09 Stowaway

Someone has managed to hide somewhere on board and is not discovered before the vessel sails. A stowaway will probably be discovered a few days after the vessel sails, at which time the GM will reveal his/her existence.

10-20 Passengers Available

An individual and/or group generated at GM discretion is seeking transportation. Destination may determined as for cargo lots. Passengers will seek accommodation according to their status and ability to pay. Most vessels can accept steerage passengers, but few nobles will accept this class of accommodation. Fares are negotiable.

STEERAGE: Sleep where you can accommodation. Emigrants and/or poor folk usually travel this way. Typical fares are 1d per day (food) plus 1 farthing per league.

CABINS: Typical fares for *each berth* are 1d per league, plus 2d per day (food). A passenger requiring a private cabin will have to pay for *all* berths in the cabin. The rate given is for basic cabin accommodation; large well appointed cabins may cost more.

CARGO MANIFEST

A record of cargo transactions for the vessel. It is normal to run a cargo manifest for the duration of one voyage (home port back to home port) and start a new manifest. A form is included on the following page which may be photocopied for personal use. The following defines Manifest column headings:

DATE/PORT
The date and port of this cargo transaction.

LOT
Any convenient number to identify the lot.

CARGO
The specific commodity contained in this lot if assigned by the GM.

OP (Operation)

A letter code to indicate whether this lot was Loaded (L), Unloaded (U), Damaged (D), Jettisoned (J), or Pillaged (P).

TUNS
The total tuns in this cargo lot.

VALUE
The value of the lot per **tun.** Record the buying price when a cargo is loaded, and its selling price when unloaded.

HOLD
A running total of **all** tuns of cargo aboard the vessel. That is, when a lot is loaded this number increases, and when a lot is unloaded it decreases, in either case by the amount of tuns involved. Hold tunnage can not exceed the vessel's Net Burthen without overloading penalties.

NOTES
Miscellaneous notes as desired, such as the name of the mercantyler, patrons and their share, profit made on a lot, etc.

Manifest Entries

When a lot is sold, a separate entry is made on the cargo manifest indicating the date, port, tuns unloaded, value (selling price per tun in this case), and the new Hold balance. Cancel the original entry by striking a line through it.

The tunnage of a lot can also change as a result of damage, pillage, being jettisoned, or partial sale. This is recorded by making an entry for each event, then another entry recording the remaining tuns of this lot, and finally cancelling the original entry by drawing a line through it. This procedure will maintain a history of cargo transactions for future reference. Remember to adjust the Hold tunnage in all cases.

CARGO MANIFEST

VESSEL_____ Gross _____ tuns

REGISTRY_____ Net _____ tuns

Date	Port	Lot	Cargo	Op	Tuns	Value	Hold	Notes

The ***Port Almanac*** contains information pertaining to the configuration, size and facilities of ports.

PORT

Ports are listed alphabetically for each regional map. Grid location is also given.

SHIPWRIGHT

The size, quality and pricing structure of the freemaster shipwright are given.

[Sz] SIZE

The number of permanent employees including the freemaster, apprentices and bonded masters. Size is an assessment of yard capacity. Dividing the total number of mandays for work done at a yard by Size is an approximation of how many days the work will take. Of course, the shipyard may already be busy with other jobs, and the date when work can commence is handled at GM discretion.

[ML] QUALITY

The basic *Shipwright ML* for work done at this yard. This is not necessarily the ML of the freemaster.

[CF] COST FACTOR

Average cost (materials plus labour) are determined in the shipbuilding rules. The given factor is used to multiply cost to determine the average retail price for work at **this** yard. Hence, if cost is 2000d, and yard CF is 1.30, the average retail would be 2000d times 1.30 = 2600d. CFs vary due to local availability of materials, freemaster skill, and the level of demand in the local market. It can be varied at GM discretion.

GUILDS

The facilities present at the port for the Pilot's Guild (P) and the Seaman' Guild (S), if any.

[P] PILOTS' GUILD

Most ports have a guildhall and hostel for pilots where private rooms may be rented for a modest fee of 1 or 2d per night. A small guildhall (S) will have 1-4 rooms; they are usually not staffed and master pilots may obtain keys from the harbourmaster. Medium (M) sized guildhalls (5-9 rooms) generally have a resident guild administrator who is always a retired pilot. Large hostels (L) have 10+ rooms, live-in servant(s) who can provide meals at a nominal fee (usually cost). Most also have a small Teaching College administered by the guild. All guildhalls offer storage of a pilot's personal effects, perhaps copies of a rutter or charts, at nominal cost.

[S] SEAMANS' GUILD

The local Seamans' Guildhall (if any) where seamen can be hired. A hot supper and bunk are available for 1d per night. Each guildhall has a resident administrator and 1-3 assistants depending on size.

S	**Small**	6-12 bunks
M	**Medium**	13-24 bunks
L	**Large**	25-48 bunks

Accommodations are crude and may be rented to non-guildsmen when vacant.

MARKET

An assessment of the local market. Three factors are given:

[Sz] SIZE

An assessment of trade volume and activity, given on a scale of one to nine, with [1] being a very minor market, [5] an average market, and [9] a very major market. Size does not depend only on the population of the settlement, although this is major factor. Some ports have small populations but large hinterlands, and some, like Cherafir, also are regional trade centers.

[Hwk] HAWKING FEE

With the exception of foodstuffs, goods that are unloaded in a port must either be delivered directly to the bonding house, or they are subject to a Hawking tax. Hawking fees are set by the local government at a percentage of the retail value.

The local *bondmaster* assesses and collects hawking fees, and issues *hawking certificates*, as proof of payment. Often, the bondmaster's assessment relies on the declaration of the merchant and tends to be on the low side. There is frequent opportunity for corruption.

[Bnd] BONDING FEE

Goods brought into a settlement which are not to be immediately sold must be placed in bond. Virtually all settlements have official bonding houses, usually owned by the local government and administered by the bondmaster. Goods which are intended for immediate re-export, even if they never leave the dock, must pay at least one month's bonding fee. Bonding fees are a percentage of assessed value, per month. The most common bonding fee is one percent.

PORT FEES

Three standard port fees are given:

[Pil] PILOTING FEE
The standard piloting fee payable to the harbourmaster for entering or leaving the port. Vessels of non-local registry (any size), or any vessel more than 30 feet in length, must take on the local pilot (harbourmaster) when they enter or leave port, paying the indicated flat fee (pence) regardless of vessel size. One half the piloting fee is normally charged for moving a vessel from a wharf to anchorage or *vice-versa*. A new arrival which anchors instead of berthing, must pay the normal piloting fee for the first step and then one half the fee if it later moves from anchorage to wharf.

[Wfg] WHARFAGE
The price charged to moor at a dock is given in *per foot* (of vessel length) *per day*. The rate is noted in pence (d) or farthings (f). Four farthings equal one penny. Hence, if the wharfage rate is noted as 3f, a vessel of 60 feet length would pay 180f (45d) per day.

Anchorage Fee
Vessels may anchor in the harbour, waiting for dock space, a favourable tide, etc., for one fifth (20%) of the *Wharfage Fee.*. Most ports will charge a similar fee for beaching a vessel on any beach within arrow distance of the citadel.

[Reg] REGISTRY
The fee in *pence per foot (of length) per year* to register a vessel at the port. Vessels of local registry pay only half the normal *Wharfage* and *Anchorage* fees. Locally registered vessels of less than 30 feet in length, are not required to take on the pilot when entering, leaving, or moving within a port. Most vessels are registered only in their home ports, but some are registered in several ports where they do business, and some are unregistered. Registration entitles the vessel to wear the merchant flag of the port's country.

CARGO

Information concerning the port's ability to load and unload cargo. Additional background is given in the ***Maritime Trade*** article.

[TW] Tuns Per Watch
The average number of tuns of cargo that may be loaded or unloaded in **one watch** (daylight hours) at this port. The rating is primarily dependent on port facilities, such as wharves, derricks, and the availability of longshoremen. If a captain chooses to handle cargo with his own crew, the TW rating would be less. This would depend on the size of the crew, but for simplicity it can be assumed to be half of the normal TW.

[CT] Cost Per Tun
The average cost charged by the local longshoremen to load or unload one tun of cargo and transport it to the bonding house or market as desired. Rates vary mainly with the distance the cargo must be hauled, and are quoted in pence or farthings. Hence a rate of 3f, unloading a cargo of 8 tuns, would cost 24 farthings (6d). If cargo is handled only by the vessel crew, the CT rate is ignored.

Note: *a tun of cargo is equal to 2000 pounds or 100 cubic feet.*

TIDE

The time of day at which the first high tide occurs. Hence, "0430" indicates a high tide at 04:30 and again at 16:30. Low tides occur six hours later (10:30 and 22:30 in the example given). Non-tidal ports are indicated with the code **NT**

Tidal ports may only be entered on the flood tide and departed on the ebb tide. More accurately, they can be entered from three hours before high water to one hour after, and departed from one hour before high water to three hours after. The time overlap allows for *high slack,* the period one hour each side of high water when tidal currents are at a minimum. These restrictions assume a vessel with an average draft of six feet. The actual draft of a vessel may modify the tide windows at GM discretion.

Port Almanac

HARN REGION

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Aleath [E8]	14	105	1.50	M	M	35d	1d	50d	3	10%	2%	10	5f	0330
Arathel [G2]	6	90	1.35	S	S	20d	1d	40d	2	8%	1%	8	1d	0400
Arone [K2]	4	105	1.25	S	S	20d	5f	40d	2	5%	1%	6	1d	0300
Burzyn [L7]	3	65	1.25	S	S	12d	3f	20d	3	12%	3%	6	1d	NT
Cherafir [N10]	8	75	1.35	L	L	50d	2d	100d	6	15%	3%	14	6f	0300
Chyrefal [N9]	8	105	1.50	M	M	40d	5f	75d	3	11%	1%	8	5f	0230
Coranan [E7]	14	65	1.30	M	L	25d	2f	30d	4	9%	2%	10	5f	NT
Dyrisa [E8]	8	72	1.25	--	--	20d	1d	40d	2	7%	2%	10	1d	NT
Elshavel [I7]	9	115	2.00	S	--	400d	9d	*	1	25%	7%	6	3d	NT
Firis [G6]	3	90	1.25	S	S	20d	2f	25d	1	8%	1%	10	3f	NT
Geldeheim [H2]	9	120	1.50	--	S	**	**	50d	3	9%	2%	12	1d	0430
Geshtei [E7]	3	70	1.25	--	--	20d	3f	35d	2	10%	1%	6	5f	NT
Golotha [D7]	3	90	1.50	L	L	40d	1d	40d	4	5%	1%	12	3f	0430†
Gythrun [M8]	5	70	1.30	S	S	35d	3f	40d	2	10%	1%	6	1d	0230
Karveth [M10]	6	85	1.45	M	S	45d	2d	55d	3	12%	1%	8	5f	0300
Keiren [H1]	7	95	1.35	S	S	20d	1d	40d	1	10%	1%	6	3f	0400
Kuseme [E7]	See Coranan			--	M	25d	2f	30d	--	9%	2%	10	5f	NT
Lorkin [J2]	8	100	1.30	S	M	30d	1d	50d	3	7%	1%	8	1d	0330
Marby [I1]	4	95	1.20	S	S	25d	1d	45d	2	10%	1%	8	1d	0330
Moleryn [F7]	--	--	--	--	--	20d	2f	15d	1	9%	2%	6	1d	NT
Nurisel [M10]	9	90	1.50	L	M	40d	1d	60d	3	13%	2%	10	5f	0300
Parnan [G6]	2	75	1.30	--	--	20d	2f	30d	1	10%	1%	6	3f	NT
Pled [H1]	3	95	1.30	--	S	20d	1d	35d	2	9%	1%	4	3f	0400
Sarkum [D9]	8	90	1.35	S	S	20d	1d	40d	2	8%	1%	8	1d	0400
Sherwyn [J1]	4	100	1.30	S	S	25d	1d	50d	2	7%	1%	4	5f	0330
Shiran [G6]	5	70	1.30	S	S	30d	2f	25d	3	10%	2%	10	1d	NT
Shostim [D6]	9	85	1.50	M	M	35d	1d	30d	2	5%	2%	10	3f	0430
Stimos [F6]	2	90	1.20	S	S	20d	1d	25d	1	7%	1%	4	3f	NT
Tandir [G2]	5	90	1.25	--	--	20d	1d	27d	1	9%	1%	6	5f	0400
Techen [E7]	4	80	1.30	--	S	20d	3f	30d	2	10%	1%	6	1d	NT
Telen [E7]	6	75	1.25	S	S	20d	1d	35d	2	11%	1%	8	1d	NT
Thay [M7]	10	80	1.35	M	M	45d	1d	70d	4	11%	2%	14	5f	0230
Tormau [C6]	4	95	1.40	S	S	20d	2f	30d	1	3%	.5%	6	1d	0500
Trobridge [H6]	--	--	--	--	--	--	--	--	1	--	--	2	5f	NT
Ulfshafen [J7]	9	115	1.75	S	M	100d	4d	*	2	20%	10%	8	3d	0330
Vaagel [H2]	6	85	1.30	--	S	20d	2d	35d	2	7%	1%	6	1d	0430
Zuden [I1]	8	100	1.40	S	S	20d	2d	40d	2	7%	1%	8	1d	0330

* Registry is free, but given only at royal invitation.

** Piloting and Wharfage Fees vary according to vessel registry:
Geldeheim [25d/2f] Other Orbaalese [40d/1d] Foreign [80d/4d]

† Golotha canal gates open at high slack only. See **Cities of Harn** and **Son of Cities.**

Port Almanac

IVINIA REGION

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Amavik [G3]	6	100	1.40	--	--	12d	1d	24d	1	5%	1%	4	1d	1100
Beleka [J9]	20	100	1.40	M	L	22d	6f	90d	5	10%	2%	12	5f	1130
Bilun [K7]	6	90	1.30	S	S	18d	3f	75d	2	7%	1%	6	1d	1130
Coselin [C5]	10	95	1.40	S	S	20d	2f	100d	2	8%	1%	6	3f	0030
Dagenborg [J7]	8	90	1.25	S	S	17d	1d	48d	2	7%	1%	8	2f	1130
Endelby [G8]	6	100	1.25	S	S	18d	3f	40d	2	6%	1%	6	2f	0030
Fuhreling [K9]	25	85	1.40	L	L	25d	6f	90d	6	11%	2%	12	3f	1130
Gilben [H9]	7	100	1.30	--	S	20d	1d	60d	3	7%	1%	6	2f	0000
Gildin [L7]	6	90	1.25	--	S	20d	1d	75d	3	7%	1%	8	1f	1030
Guswich [J9]	7	90	1.30	S	M	20d	1d	85d	4	8%	2%	10	2f	1130
Harling [J6]	15	95	1.35	M	L	22d	5f	100d	5	12%	2%	12	3f	0000
Indeheim [K8]	10	100	1.25	--	S	19d	2f	75d	3	8%	1%	10	2f	1130
Inlevik [C3]	8	110	1.45	--	S	22d	3f	80d	2	6%	1%	6	1f	1130
Jarehm [M9]	20	90	1.30	M	L	25d	5f	110d	5	10%	2%	12	3f	1100
Koenel [M9]	6	100	1.40	--	S	20d	2f	90d	2	9%	1%	6	2f	1100
Lokis [F6]	8	95	1.50	S	S	40d	3d	200d	1	10%	3%	6	3f	0000
Lotenheim [N2]	7	115	1.50	S	S	20d	3f	75d	2	8%	2%	6	2f	0930
Mutilheim [M9]	4	90	1.35	--	S	20d	1d	60d	1	6%	1%	6	2f	1100
Pelby [J7]	24	95	1.45	M	L	20d	5f	90d	5	12%	2%	12	5f	0000
Pelyn [H6]	10	95	1.40	--	--	12d	1d	50d	2	7%	3%	6	3f	0030
Rosby [N7]	14	100	1.30	M	M	20d	3f	85d	5	9%	2%	12	3f	1000
Stimby [G7]	8	90	1.30	--	S	20d	2f	75d	3	7%	1%	8	3f	0030
Suteling [J10]	12	100	1.30	S	M	20d	3f	80d	4	9%	1%	8	1d	0000
Ulrin [D10]	10	110	1.45	S	L	25d	2f	100d	3	7%	1%	8	5f	0100
Vulenheim [H6]	24	115	1.45	S	M	12d	1d	60d	4	7%	2%	12	1d	0100
Wulfenheim [H1]	4	105	1.50	--	--	12d	1d	16d	1	5%	1%	4	2f	1030

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Alinger [H3]	6	95	1.25	S	S	20d	3f	65d	2	10%	1%	10	3f	0130
Andrin [G8]	6	75	1.25	S	S	18d	1d	70d	3	10%	1%	8	3f	0300
Anstal [J2]	4	80	1.20	S	S	15d	1d	50d	3	10%	1%	10	1d	0000
Antiome [K10]	8	70	1.30	S	M	20d	6f	80d	4	10%	1%	14	5f	NT
Antol [N5]	4	70	1.20	--	--	15d	2f	50d	3	10%	1%	8	3f	NT
Areshones [E8]	5	80	1.25	--	S	20d	3f	90d	3	8%	1%	8	2f	0230
Argonel [A10]	6	100	1.30	M	M	25d	1d	115d	4	12%	2%	10	3f	0300
Balok [H9]	4	75	1.20	S	S	20d	1d	70d	3	10%	1%	10	3f	0400
Beldira [L5]	6	80	1.30	M	M	25d	3f	65d	5	12%	2%	12	1d	NT
Bodara [C9]	5	85	1.20	S	M	25d	1d	70d	4	11%	1%	10	3f	0230
Borin [L1]	4	80	1.25	--	--	18d	3f	55d	2	8%	1%	8	2f	1130
Byrgen [G4]	3	90	1.35	--	--	18d	1d	60d	2	7%	1%	8	2f	0130
Charones [C10]	4	95	1.25	S	M	20d	1d	70d	4	10%	1%	10	2f	0300
Chegen [M6]	--	--	--	--	--	--	--	--	2	8%	1%	6	2f	NT
Chememby [G6]	22	90	1.30	L	L	25d	7f	75d	7	9%	2%	16	3f	0200
Chires [G9]	3	75	1.20	--	--	15d	1d	45d	4	8%	1%	10	2f	NT
Dalben [K10]	4	70	1.20	--	--	14d	3f	50d	3	7%	1%	6	2f	NT
Dechen [M5]	5	70	1.20	--	--	16d	3f	45d	3	8%	1%	6	3f	NT
Deserid [C10]	5	75	1.25	--	S	20d	1d	50d	4	10%	1%	10	3f	0300
Eilyria [H9]	20	90	1.35	L	L	22d	5f	80d	7	11%	2%	16	1d	0400
Ekedon [M5]	3	75	1.20	--	--	16d	2f	65d	3	9%	1%	8	2f	NT
Elkirnon [I2]	4	105	1.30	--	S	15d	1d	55d	3	10%	1%	8	3f	0030
Enpedon [I3]	10	90	1.25	S	M	20d	1d	75d	4	10%	2%	10	3f	0030
Enselet [L9]	8	70	1.25	S	S	21d	1d	60d	6	12%	2%	12	3f	NT
Eshapel [C10]	12	90	1.25	L	L	22d	6f	90d	6	12%	2%	16	3f	0300
Eslon [J7]	11	85	1.25	M	M	24d	1d	80d	5	10%	1%	12	3f	0400
Evanekin [G6]	6	95	1.30	M	L	20d	1d	65d	5	7%	1%	10	2f	0200
Felkenby [F7]	6	90	1.25	S	M	18d	3f	55d	4	9%	1%	8	3f	0230
Feredis [I2]	4	80	1.20	--	--	15d	2f	50d	2	10%	1%	8	2f	0030
Feshimes [I10]	8	75	1.20	S	M	18d	3f	65d	5	11%	2%	10	2f	NT
Figend [M3]	--	--	--	--	--	--	--	--	2	7%	1%	6	3f	NT
Gelt [G6]	6	80	1.20	--	S	20d	1d	55d	2	8%	1%	10	2f	0200
Genja [J1]	12	90	1.25	M	L	21d	5f	60d	4	12%	1%	14	3f	0000
Glidby [K1]	5	100	1.30	--	S	18d	2f	65d	1	7%	1%	8	2f	1130
Gosheim [J1]	4	90	1.25	--	S	20d	2f	75d	2	8%	1%	6	2f	0000
Greneth [I8]	7	80	1.25	--	S	20d	2f	70d	3	9%	1%	6	3f	0330
Gulinheim [G4]	6	85	1.30	S	S	15d	3f	55d	3	10%	1%	8	2f	0130
Haidigen [J10]	4	80	1.30	--	--	18d	2f	60d	3	10%	1%	8	3f	NT
Haleon [K8]	4	75	1.20	--	--	15d	1f	55d	3	9%	1%	8	2f	0430
Harbraen [M9]	6	80	1.25	S	M	20d	2f	50d	5	10%	2%	8	5f	NT
Hargulda [H4]	6	75	1.20	--	--	15d	2f	45d	2	9%	1%	10	2f	NT
Helgen [L4]	--	--	--	--	--	10d	1f	25d	1	5%	1%	6	2f	NT
Heredon [I6]	15	85	1.25	S	M	20d	1d	60d	3	8%	1%	10	2f	0300
Hidesi [I10]	--	--	--	--	S	15d	2f	45d	3	7%	1%	8	2f	NT
Hlen [M2]	2	70	1.20	--	--	--	--	--	2	5%	1%	6	1f	NT
Holegore [G9]	--	--	--	--	--	15d	2f	45d	3	8%	1%	8	2f	NT
Hutsinby [J3]	4	105	1.25	--	--	16d	2f	40d	1	5%	1%	6	2f	NT
Ifane [H3]	32	95	1.35	L	L	25d	5f	81d	6	11%	2%	16	3f	0130
Ilvurin [N9]	3	85	1.25	--	--	15d	3f	40d	3	7%	1%	8	1f	NT
Isheres [F8]	8	90	1.40	--	S	20d	3f	55d	3	8%	1%	10	2f	0230
Jandor [N10]	6	85	1.25	S	S	16d	6f	40d	5	11%	2%	14	3f	NT
Jadrath [J8]	6	90	1.25	S	S	20d	3f	55d	2	9%	1%	8	2f	0400
Jeloen [E8]	8	95	1.20	S	S	20d	1d	45d	3	9%	1%	8	2f	0230
Karemus [D8]	15	80	1.25	L	L	20d	2d	50d	5	11%	2%	14	3f	0300
Kereon [J3]	8	90	1.20	--	S	21d	1d	45d	4	10%	1%	12	2f	0100
Kerola [F9]	5	85	1.25	--	S	17d	3f	40d	3	7%	1%	8	2f	NT
Koladis [G6]	8	90	1.25	S	S	15d	1d	55d	3	8%	1%	8	2f	0200
Kolare [I8]	12	75	1.25	S	S	20d	1d	50d	4	11%	1%	10	3f	0400

Port Almanac

SHORKYNE REGION

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Lacheryn [M10]	2	100	1.25	--	--	15d	2f	40d	3	7%	1%	6	1f	NT
Leden [I6]	20	90	1.30	S	M	20d	1d	70d	4	10%	2%	10	2f	0300
Lutana [E8]	2	75	1.25	--	--	10d	2f	40d	3	5%	1%	6	3f	0000
Lyth [H3]	8	90	1.30	--	S	15d	3f	45d	2	7%	1%	10	2f	0100
Megrana [I3]	4	80	1.25	--	--	14d	1f	40d	2	7%	1%	6	1f	0030
Meshare [D10]	2	90	1.35	--	--	12d	3f	35d	3	8%	1%	8	2f	NT
Misena [G10]	4	85	1.25	S	S	15d	3f	40d	3	7%	1%	6	2f	NT
Montelea [K8]	3	80	1.30	--	--	16d	2f	35d	2	9%	1%	6	1f	NT
Netela [F9]	7	75	1.25	--	S	20d	3f	70d	4	10%	1%	10	3f	NT
Nevel [K2]	2	70	1.25	--	--	--	--	--	2	5%	1%	6	2f	NT
Noortel [I2]	6	75	1.25	--	S	15d	1d	55d	2	7%	1%	8	1f	0030
Noraby [D8]	--	--	--	M	M	12d	1d	40d	4	8%	1%	8	3f	0300
Norlay [H9]	8	80	1.20	S	S	15d	3f	45d	3	8%	1%	6	2f	0400
Odirun [N10]	4	70	1.20	--	--	14d	2f	30d	2	7%	1%	6	1f	NT
Ogened [L5]	2	75	1.20	--	--	--	--	--	1	6%	1%	6	3f	NT
Oneon [H4]	3	80	1.20	--	S	13d	2f	50d	2	7%	1%	6	2f	0200
Osena [K1]	6	85	1.25	--	S	14d	3f	45d	2	7%	1%	8	1f	1130
Pelden [N2]	2	80	1.20	--	--	--	--	--	2	5%	1%	6	2f	NT
Perel [B10]	4	90	1.25	S	S	19d	1d	95d	3	10%	1%	10	2f	0300
Ponel [M5]	2	70	1.20	--	S	15d	3f	60d	3	8%	1%	6	2f	NT
Quarelin [G10]	6	75	1.25	S	M	22d	1d	78d	5	10%	1%	12	3f	NT
Quarena [L9]	3	75	1.25	S	S	15d	2f	45d	4	8%	1%	8	2f	NT
Reshaal [H3]	8	90	1.25	M	L	18d	3f	60d	4	8%	1%	8	2f	0130
Rigenos [M9]	--	--	--	--	S	15d	2f	40d	3	7%	1%	6	2f	NT
Sagora [H9]	12	85	1.25	L	L	20d	1d	75d	5	10%	2%	16	1d	0400
Seberon [C9]	8	90	1.25	S	S	17d	1d	65d	3	8%	1%	10	2f	0230
Sonege [M2]	2	70	1.20	--	--	--	--	--	1	5%	1%	6	1f	NT
Tazela [H5]	2	75	1.25	--	--	13d	3f	40d	2	6%	1%	8	2f	NT
Tegorby [J3]	3	80	1.20	--	--	15d	1f	40d	2	7%	1%	6	2f	NT
Teleged [I8]	4	80	1.20	--	S	15d	2f	45d	2	8%	1%	6	2f	0330
Telekur [E8]	3	70	1.20	--	S	17d	2f	65d	2	8%	1%	8	3f	0300
Thanrin [F9]	--	--	--	--	S	15d	1d	60d	3	7%	1%	10	3f	NT
Tirgolis [K6]	8	85	1.25	S	M	19d	1d	70d	4	10%	1%	10	3f	NT
Trepura [H7]	18	95	1.40	*L	M	20d	2f	85d	1	10%	1%	8	2f	0300
Turesgal [E8]	14	90	1.25	M	M	22d	3f	80d	5	10%	2%	10	3f	0230
Unten [M3]	--	--	--	--	--	10d	2f	25d	1	5%	1%	6	2f	NT
Usteth [I3]	4	90	1.25	S	S	15d	3f	50d	3	8%	1%	6	3f	0030
Vadone [I10]	2	70	1.20	--	--	15d	3f	40d	2	6%	1%	8	2f	NT
Vandekon [D8]	6	90	1.25	--	S	18d	3f	45d	2	8%	1%	8	2f	0230
Varkenheim [H6]	24	85	1.20	M	L	22d	1d	74d	5	11%	2%	12	2f	0230
Vogedin [H3]	--	--	--	--	--	12d	2f	50d	2	7%	1%	6	1f	0200
Xeradyn [H6]	8	85	1.20	S	S	17d	3f	60d	3	8%	1%	8	2f	0230
Yelaben [G5]	6	85	1.25	--	--	15d	2f	50d	1	7%	1%	6	2f	0130
Zyna [I5]	2	70	1.20	--	S	14d	2f	42d	2	6%	1%	6	2f	NT

* **Trepura:** This small town is the site of the famous Lado College. Run by the Pilots' Guild, it is the largest and most prestigious pilot college west of Azeryan, rivaled only by a similar institution at Nurisel on Melderyn.

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKETS			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Agelos [G6]	4	75	1.30	--	--	15d	3f	36d	2	7%	1%	8	2f	NT
Alwin [B2]	16	90	1.40	S	M	24d	1d	75d	5	10%	1%	14	3f	0300
Anegon [F10]	15	85	1.30	S	M	24d	1d	66d	5	11%	2%	14	3f	0100
Ankaryf [H9]	9	80	1.30	--	--	15d	3f	48d	1	7%	1%	6	2f	0030
Anlide [K5]	8	70	1.30	--	--	15d	3f	30d	2	7%	1%	8	2f	NT
Antireo [M8]	4	85	1.30	S	S	15d	3f	48d	2	8%	1%	6	2f	0030
Antivel [C4]	12	75	1.35	S	M	21d	1d	54d	5	10%	1%	8	3f	NT
Arashomes [G7]	12	80	1.35	S	M	21d	5f	48d	5	12%	2%	16	1d	NT
Aregan [B3]	6	80	1.30	S	S	21d	5f	72d	4	10%	1%	14	3f	NT
Astirel [E7]	18	80	1.30	S	S	21d	1d	51d	3	10%	1%	10	2f	0200
Baid [J7]	8	75	1.30	S	S	15d	6f	36d	2	8%	1%	8	2f	0200
Banile [G7]	4	75	1.25	--	--	15d	3f	30d	2	7%	1%	6	1f	NT
Beledar [I4]	10	75	1.30	S	S	21d	1d	30d	4	10%	1%	12	3f	NT
Bereb [L7]	--	--	--	--	--	15d	3f	30d	1	7%	1%	6	2f	0130
Berema [B3]	18	85	1.45	M	L	24d	6f	84d	7	12%	2%	16	1d	NT
Bernow [B5]	8	80	1.25	S	S	18d	5f	48d	3	8%	1%	8	2f	0230
Berone [M6]	30	70	1.30	M	L	24d	5f	96d	7	12%	2%	16	1d	0100
Betagra [L9]	7	75	1.30	S	S	18d	3f	42d	2	7%	1%	8	2f	1200
Bijones [K8]	2	70	1.30	--	--	12d	2f	30d	1	6%	1%	6	1f	NT
Bindemes [C6]	6	85	1.30	S	S	15d	5f	54d	3	8%	1%	8	2f	0200
Bregemes [M4]	--	--	--	--	--	15d	3f	30d	1	7%	1%	6	1f	NT
Cabra [C5]	14	95	1.30	S	M	21d	5f	66d	4	10%	2%	12	3f	0200
Cerlene [N6]	See *Kethano*													
Charope [M7]	16	80	1.30	--	S	18d	3f	48d	1	7%	1%	6	1f	0100
Cheaga [M7]	10	70	1.30	S	S	15d	1d	36d	2	8%	1%	8	2f	0100
Chedilo [H9]	28	85	1.35	M	L	21d	6f	48d	5	10%	1%	14	1d	0030
Chenas [L8]	12	70	1.30	S	M	21d	5f	51d	4	10%	1%	12	3f	0030
Cheryser [E6]	4	85	1.30	--	S	15d	3f	60d	2	8%	1%	8	2f	0130
Chirole [D9]	5	80	1.30	--	S	18d	1d	51d	2	7%	1%	8	2f	0100
Chodyn [I7]	6	70	1.30	S	--	15d	3f	30d	3	7%	1%	8	3f	NT
Daage [F6]	5	80	1.30	--	--	15d	3f	54d	2	8%	1%	8	2f	0200
Dagael [D5]	8	80	1.30	--	--	15d	5f	48d	3	7%	1%	8	2f	NT
Dalfos [H3]	2	70	1.25	--	--	15d	2f	30d	2	8%	1%	8	2f	NT
Dalonby [A4]	10	85	1.30	S	M	21d	1d	60d	4	9%	1%	10	2f	0230
Darimur [K3]	6	75	1.30	S	S	21d	5f	36d	4	10%	2%	14	3f	NT
Darlon [I8]	16	80	1.35	M	M	21d	6f	75d	5	10%	1%	14	2f	0100
Darshen [F6]	31	90	1.35	M	L	21d	5f	51d	5	10%	2%	14	2f	0200
Deamus [N6]	6	75	1.30	S	S	15d	6f	80d	3	8%	1%	10	2f	0100
Degau [E6]	12	85	1.40	S	M	21d	5f	60d	4	10%	1%	12	3f	0130
Delfis [C6]	7	80	1.25	S	S	15d	1d	51d	3	8%	1%	8	2f	0200
Demath [L8]	8	80	1.30	S	S	18d	1d	48d	3	8%	1%	10	2f	1200
Demegin [K9]	5	85	1.30	--	--	15d	5f	36d	2	7%	1%	10	2f	1200
Dinelis [D8]	12	95	1.35	S	S	15d	2f	42d	2	7%	1%	6	2f	0100
Dorimes [E10]	8	70	1.30	--	--	15d	2f	30d	1	7%	1%	4	1f	0100
Dovarium [L9]	22	75	1.35	M	L	24d	5f	72d	5	10%	1%	16	3f	1200
Dyna [J5]	--	--	--	--	--	12d	3f	42d	1	7%	1%	6	2f	NT
Ebale [J7]	4	70	1.30	--	--	15d	2f	30d	2	8%	1%	6	2f	0200
Edimenis [M5]	2	70	1.20	S	--	15d	2f	54d	2	7%	1%	8	2f	NT
Elediro [M7]	18	85	1.35	M	M	21d	6f	80d	4	10%	2%	12	2f	0100
Elsum [L8]	6	70	1.30	--	--	15d	5f	30d	2	7%	1%	8	2f	0100
Elyde [L1]	2	75	1.20	--	--	12d	2f	21d	1	6%	1%	6	2f	NT
Emane [A2]	5	85	1.35	S	S	15d	2f	66d	3	7%	1%	6	2f	0300
Enefen [I4]	--	--	--	--	--	15d	2f	30d	1	7%	1%	6	1f	NT
Engaritane [G2]	6	75	1.25	S	S	21d	5f	42d	5	10%	1%	14	2f	NT
Eponen [J8]	16	85	1.35	M	S	18d	6f	66d	2	8%	1%	10	3f	0030
Erebis [C3]	--	--	--	S	S	12d	3f	30d	4	8%	1%	8	2f	NT
Erion [D10]	6	75	1.30	S	S	15d	1d	51d	2	8%	1%	8	2f	0100
Falorens [M3]	5	70	1.30	S	S	21d	5f	36d	5	10%	1%	14	2f	NT

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Febaris [M8]	10	75	1.30	S	M	21d	6f	75d	4	10%	1%	14	3f	0030
Firade [I7]	--	--	--	--	--	16d	2f	36d	2	7%	1%	6	2f	NT
Galdela [M8]	5	75	1.30	S	S	15d	2f	42d	2	7%	1%	8	2f	0030
Galishenes [F3]	--	--	--	S	S	21d	6f	42d	5	10%	1%	14	2f	NT
Garlan [K6]	12	85	1.30	S	M	21d	6f	48d	6	10%	2%	14	3f	0230
Gebrond [M7]	24	80	1.35	M	M	21d	1d	60d	4	10%	2%	14	2f	0100
Gelamo [I6]	21	85	1.30	M	M	24d	5f	66d	6	12%	1%	14	2f	NT
Gelono [G7]	--	--	--	S	S	12d	1d	30d	3	8%	1%	10	2f	NT
Gelori [H10]	10	90	1.35	--	S	18d	2f	48d	1	8%	1%	6	1f	0030
Gelvis [L9]	6	80	1.30	S	S	15d	5f	51d	3	7%	1%	8	2f	1200
Gemeth [E5]	4	70	1.25	--	--	12d	3f	42d	2	7%	1%	6	2f	NT
Gerefe [H6]	4	70	1.25	--	S	12d	2f	36d	3	7%	1%	8	2f	NT
Gilonder [I7]	5	75	1.30	S	S	15d	5f	30d	3	7%	1%	8	2f	NT
Glaron [B1]	6	80	1.30	S	S	21d	1d	75d	3	8%	1%	8	2f	0330
Gorium [M5]	8	75	1.25	S	S	21d	5f	84d	4	10%	1%	10	3f	NT
Greda [G8]	12	85	1.30	S	S	21d	5f	42d	4	11%	2%	12	2f	NT
Gulvon [G4]	4	70	1.30	--	--	15d	1d	30d	2	8%	1%	10	2f	NT
Gwefyn [F3]	4	70	1.25	--	--	12d	2f	36d	2	8%	1%	8	2f	NT
Habala [J7]	24	85	1.35	M	L	24d	1d	51d	6	11%	2%	14	2f	0100
Halesome [H5]	6	70	1.30	--	--	18d	5f	42d	2	10%	1%	12	3f	NT
Halna [G9]	6	75	1.30	S	S	15d	5f	36d	2	6%	1%	8	2f	0100
Harigol [D6]	13	80	1.35	S	M	21d	1d	60d	4	10%	2%	12	2f	0200
Heldin [D9]	14	85	1.35	M	M	24d	5f	66d	4	10%	1%	14	3f	0100
Helenon [D4]	7	75	1.25	--	S	15d	3f	51d	3	7%	1%	8	2f	NT
Helid [F6]	--	--	--	--	S	15d	6f	30d	2	7%	1%	6	1f	0200
Hilneos [E9]	6	75	1.30	--	--	15d	3f	30d	2	7%	1%	6	2f	NT
Himos [K9]	7	90	1.30	S	S	18d	1d	42d	2	8%	1%	8	3f	1200
Himoshin [H8]	8	75	1.30	S	S	15d	5f	42d	4	8%	1%	10	3f	NT
Horaga [I8]	10	70	1.30	--	--	21d	5f	48d	4	10%	2%	10	2f	0130
Horbus [K10]	14	90	1.35	--	--	18d	2f	36d	1	7%	1%	4	1f	1200
Horgela [J7]	10	85	1.30	S	S	18d	5f	36d	3	8%	1%	10	3f	0130
Ilbris [I3]	10	80	1.30	S	M	21d	1d	51d	4	10%	2%	12	2f	NT
Ilgone [C6]	4	75	1.25	S	M	12d	3f	51d	4	8%	1%	8	2f	0200
Jaleda [J6]	6	75	1.30	S	M	21d	1d	42d	5	10%	1%	14	3f	NT
Janora [J7]	41	90	1.45	L	L	27d	6f	66d	8	12%	1%	16	3f	0200
Jireno [F7]	4	90	1.35	S	S	15d	2f	36d	2	7%	1%	8	2f	0200
Kamoria [I2]	4	70	1.30	--	--	15d	5f	30d	3	7%	1%	8	2f	NT
Kanoga [J7]	32	85	1.35	M	L	21d	1d	60d	6	11%	2%	14	2f	0130
Kardim [C2]	--	--	--	--	--	12d	2f	24d	2	7%	1%	6	2f	NT
Kebani [E8]	14	75	1.30	--	--	15d	1d	36d	1	7%	1%	6	1f	0130
Keprel [K10]	16	85	1.30	M	L	21d	5f	51d	5	10%	1%	14	2f	1200
Kergos [B10]	8	90	1.30	S	S	21d	3f	72d	2	7%	1%	12	2f	0200
Keritau [F7]	3	75	1.25	S	S	15d	2f	36d	2	7%	1%	6	2f	NT
Kethano [N6]	18	80	1.35	M	L	24d	5f	90d	5	11%	2%	14	3f	0100
Ketra [H8]	7	80	1.30	S	S	15d	5f	36d	3	8%	1%	10	3f	0130
Kileda [G9]	6	80	1.30	S	S	18d	1d	60d	3	8%	1%	8	2f	0030
Kirgaras [D10]	16	90	1.35	M	L	24d	6f	72d	5	11%	2%	16	1d	0100
Kirin [J5]	See *Tain*													
Kirisone [E4]	6	75	1.30	S	S	18d	5f	66d	4	10%	2%	12	2f	NT
Kiropa [L3]	6	75	1.30	--	--	15d	1d	30d	2	8%	1%	8	2f	NT
Kitedes [K10]	4	90	1.30	S	M	15d	5f	36d	3	8%	1%	8	2f	1200
Kolgeth [E4]	--	--	--	--	--	12d	2f	48d	2	8%	1%	6	2f	NT
Korsumis [L7]	8	70	1.30	S	S	21d	1d	48d	3	10%	1%	10	3f	NT
Ledena [D9]	4	80	1.30	S	--	18d	6f	51d	2	8%	1%	8	2f	0100
Leidras [B3]	4	70	1.30	--	--	15d	5f	54d	3	8%	1%	8	2f	NT
Leshones [D5]	12	80	1.30	S	M	21d	6f	51d	5	10%	2%	14	3f	NT
Lesoles [M3]	--	--	--	--	--	15d	2f	30d	2	7%	1%	8	2f	NT
Libin [D9]	5	90	1.35	--	--	15d	5f	54d	2	7%	1%	8	2f	0100

Port Almanac

TRIERZON REGION

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Ligena [J8]	10	80	1.30	S	M	18d	1d	42d	4	8%	1%	10	3f	0100
Lins [C1]	--	--	--	--	S	--	--	--	3	15%	3%	8	6f	NT
Lirgun [K10]	18	85	1.30	S	M	24d	6f	51d	5	10%	2%	16	3f	1200
Logines [L1]	5	80	1.25	--	--	15d	6f	30d	3	10%	1%	14	2f	NT
Lorimae [M6]	12	85	1.30	S	M	21d	5f	80d	6	11%	2%	14	3f	0100
Magris [L10]	28	85	1.35	S	M	24d	5f	48d	4	10%	2%	12	2f	1200
Malad [A2]	16	95	1.50	S	M	24d	1d	75d	4	10%	1%	14	2f	0300
Malagos [J5]	14	75	1.30	S	S	21d	6f	42d	4	10%	1%	12	3f	NT
Malinu [L8]	6	75	1.30	S	S	18d	6f	42d	2	7%	1%	8	2f	0030
Mamesal [J9]	6	75	1.30	S	S	15d	5f	60d	3	7%	1%	8	2f	0030
Mankon [K5]	18	85	1.35	S	M	21d	1d	51d	5	11%	2%	16	2f	NT
Maris [A1]	9	90	1.45	S	S	18d	5f	75d	4	8%	1%	8	2f	0300
Maxir [B1]	4	75	1.30	S	S	15d	6f	60d	4	10%	2%	12	2f	NT
Medyna [G9]	5	75	1.30	S	S	18d	1d	54d	3	7%	1%	8	2f	0030
Meglendro [M7]	--	--	--	--	--	15d	2f	30d	1	6%	1%	4	1f	0030
Megrain [K9]	31	95	1.30	M	L	24d	1d	60d	5	10%	2%	14	3f	0030
Mekarno [K6]	8	80	1.30	S	S	15d	2f	48d	3	9%	1%	8	2f	0200
Mekile [K3]	--	--	--	--	--	12d	2f	24d	1	7%	1%	6	1f	NT
Melesuma [M3]	12	80	1.30	S	M	21d	6f	42d	5	11%	2%	16	3f	NT
Mengovik [C6]	33	85	1.45	M	L	24d	1d	84d	6	11%	2%	16	6f	0200
Mepara [D8]	17	85	1.35	M	M	21d	1d	60d	4	10%	2%	14	3f	0130
Meriol [N5]	4	70	1.30	M	L	18d	5f	75d	5	10%	1%	12	3f	0130
Modana [B2]	7	75	1.30	S	M	15d	3f	66d	3	7%	1%	6	2f	0300
Molgos [E6]	3	75	1.25	S	S	15d	3f	54d	2	7%	1%	8	2f	0130
Monules [I8]	16	85	1.35	S	S	15d	5f	60d	2	8%	1%	8	3f	0100
Murgirus [M5]	2	80	1.25	--	--	15d	2f	66d	2	10%	1%	8	2f	NT
Murshel [E9]	28	85	1.30	M	L	21d	6f	51d	6	10%	1%	16	2f	0130
Nalise [B1]	3	70	1.30	--	S	15d	2f	54d	3	8%	1%	6	3f	NT
Narune [N2]	2	70	1.25	--	S	15d	1d	30d	3	7%	1%	10	2f	NT
Nealon [M6]	6	75	1.25	S	S	18d	1d	66d	3	10%	1%	8	2f	0130
Neletu [J7]	--	--	--	S	S	15d	3f	36d	3	8%	1%	8	2f	0130
Nelomin [K10]	5	90	1.30	S	M	15d	1d	30d	3	7%	1%	10	2f	1200
Nesheles [J9]	13	80	1.35	S	M	21d	1d	72d	4	11%	2%	14	3f	0030
Nidon [I7]	--	--	--	--	--	15d	3f	42d	2	7%	1%	6	2f	NT
Niolos [F6]	4	75	1.20	S	S	12d	1d	51d	2	7%	1%	8	2f	0130
Ornea [A3]	4	70	1.25	S	S	12d	3f	60d	2	7%	1%	6	2f	0300
Palaso [G6]	--	--	--	--	--	15d	1d	30d	1	7%	1%	6	1f	0230
Panira [A1]	6	85	1.35	S	M	18d	3f	75d	3	8%	1%	8	2f	0300
Parahal [B4]	30	90	1.45	M	L	24d	1d	84d	6	10%	2%	16	5f	0230
Parebir [E9]	22	80	1.30	M	M	21d	5f	48d	5	10%	1%	14	3f	NT
Pelina [G9]	19	80	1.30	S	M	21d	1d	48d	4	10%	1%	14	2f	0100
Penetha [G6]	7	80	1.30	S	S	18d	5f	42d	4	10%	2%	12	2f	NT
Penlin [G9]	6	75	1.30	S	S	15d	2f	30d	2	7%	1%	6	2f	0100
Perna [K5]	16	75	1.30	S	M	21d	1d	42d	6	11%	2%	14	2f	NT
Pesende [H9]	6	85	1.35	S	S	15d	2f	36d	2	7%	1%	6	2f	0030
Pilasen [L10]	10	85	1.30	S	S	18d	2f	42d	2	7%	1%	6	2f	1200
Porade [N6]	6	80	1.25	S	S	15d	3f	72d	3	10%	1%	6	2f	0100
Pusinis [K1]	--	--	--	--	--	12d	2f	24d	2	7%	1%	6	1f	NT
Qualnda [K3]	10	70	1.30	S	S	21d	1d	36d	4	10%	2%	14	3f	NT
Raleth [C1]	8	75	1.30	S	S	15d	1d	48d	4	9%	1%	10	2f	NT
Regona [G1]	3	75	1.20	--	--	15d	5f	30d	3	8%	1%	8	2f	NT
Rigeros [K9]	21	85	1.35	L	L	24d	6f	90d	6	10%	2%	16	3f	1200
Rindiro [J7]	36	90	1.35	M	L	24d	5f	60d	6	12%	2%	16	3f	0130
Rizuma [G9]	21	80	1.35	S	M	21d	1d	42d	4	10%	1%	12	3f	0100
Ronde [E9]	10	70	1.25	--	S	15d	3f	30d	2	8%	1%	8	3f	0130
Sabin [K1]	4	70	1.25	S	S	21d	1d	42d	3	10%	2%	12	3f	NT
Sadrux [M6]	7	85	1.35	--	--	15d	1d	60d	3	10%	1%	8	2f	NT
Samris [M7]	6	75	1.30	S	S	18d	3f	66d	2	10%	1%	6	3f	0100

PORT	SHIPWRIGHT			GUILDS		PORT FEES			MARKET			CARGO		TIDE
	Sz	ML	CF	P	S	Pil	Wfg	Reg	Sz	Hwk	Bnd	TW	CT	HW
Sandris [D4]	6	80	1.35	S	S	15d	5f	51d	3	9%	1%	12	3f	NT
Selpiren [J4]	7	75	1.30	--	--	21d	3f	48d	2	7%	1%	6	2f	NT
Seltan [C6]	5	80	1.30	S	S	15d	3f	60d	3	8%	1%	8	2f	0200
Sholir [H4]	4	70	1.30	S	S	21d	1d	30d	4	8%	1%	10	2f	NT
Shurini [G9]	10	85	1.35	S	S	18d	6f	36d	3	8%	1%	8	2f	0100
Sindelar [E7]	8	70	1.25	--	S	18d	3f	36d	1	6%	1%	6	2f	0130
Sirse [K5]	--	--	--	S	S	15d	5f	30d	3	8%	1%	8	2f	NT
Sonau [B3]	12	90	1.45	M	L	21d	6f	80d	5	10%	2%	16	3f	0230
Spedera [K9]	10	80	1.30	S	S	15d	1d	42d	2	7%	1%	8	2f	1200
Stalenby [D6]	5	80	1.30	S	S	15d	2f	60d	3	8%	1%	8	2f	0200
Syden [F10]	7	70	1.30	S	S	18d	6f	51d	3	8%	1%	8	2f	0100
Tagan [F6]	6	85	1.30	--	S	15d	2f	30d	2	8%	1%	6	2f	0200
Tain [J5]	10	70	1.30	S	M	21d	1d	48d	5	10%	2%	14	3f	NT
Tarkain [A10]	24	95	1.45	M	L	21d	5f	75d	6	8%	1%	16	2f	0200
Taselis [L8]	7	70	1.30	--	S	12d	2f	42d	2	7%	1%	6	1f	0030
Tashones [N7]	20	85	1.30	M	L	21d	6f	54d	5	11%	2%	16	3f	0030
Teala [M7]	6	70	1.30	S	S	18d	6f	60d	3	10%	1%	8	2f	0100
Tegate [L3]	6	75	1.30	--	--	15d	2f	30d	2	7%	1%	6	1f	NT
Telpos [I8]	8	90	1.35	S	S	15d	1d	60d	2	8%	1%	8	2f	0100
Telpyr [D8]	11	90	1.30	S	S	15d	2f	42d	2	8%	1%	8	2f	0130
Tengela [K8]	10	75	1.35	S	M	21d	6f	51d	6	10%	1%	16	3f	NT
Tesdony [A2]	6	80	1.30	S	S	15d	3f	60d	3	8%	1%	6	2f	0300
Tike [N2]	4	70	1.30	--	--	15d	3f	42d	3	6%	1%	8	2f	NT
Tinkel [K9]	7	75	1.30	S	M	18d	1d	54d	3	7%	1%	10	2f	0100
Tolenos [D6]	6	75	1.30	S	S	15d	5f	54d	3	9%	1%	10	2f	0200
Tulon [J1]	--	--	--	--	--	12d	1d	30d	2	8%	1%	8	2f	NT
Tyreden [B4]	See *Parahal*													
Ubarian [K5]	34	75	1.40	M	L	24d	6f	54d	7	13%	3%	16	1d	NT
Uredren [M6]	6	85	1.25	S	M	21d	6f	72d	4	10%	1%	10	2f	0100
Urikon [D10]	6	80	1.30	S	S	15d	2f	51d	2	8%	1%	6	2f	0100
Vegusa [H3]	10	70	1.25	S	S	21d	1d	48d	5	10%	2%	14	2f	NT
Vinsol [E10]	6	75	1.30	--	S	15d	2f	36d	2	8%	1%	6	2f	0100
Vuxor [B10]	6	90	1.30	S	S	21d	5f	66d	2	6%	1%	10	1f	0200
Waleden [F3]	10	75	1.25	S	S	21d	1d	42d	5	10%	2%	16	2f	NT
Xernium [N5]	4	70	1.25	S	--	15d	2f	66d	4	10%	1%	8	3f	NT
Zelbe [K5]	See *Ubarian*													
Zerede [F6]	2	70	1.30	--	--	15d	3f	30d	1	7%	1%	6	1f	0230
Zuraal [F6]	5	80	1.20	S	S	12d	3f	48d	2	8%	1%	8	2f	0200
Zyrinby [B4]	6	75	1.30	S	S	18d	6f	66d	3	8%	1%	10	2f	0300

GLOSSARY

ANCHOR, Bottom

Most vessels carry two or three bottom anchors each of which generally weighs one percent of vessel burthen (with cable). They are attached to cables commonly 100 fathoms in length. A bottom anchor can only be used in water of 30 fathoms or less. Such depths generally occur only in coastal or river hexes or, if the pilot has chilled brine for blood, on reefs. A pilot wishing to anchor must enter a coastal, river, or reef hex, and make a grounding roll, using the pilot option *Anchor*. If the vessel does not ground, she has successfully anchored.

ANCHOR, Sea

A tapered, canvas tube deployed at the end of a cable off the bow; the drag it creates keeps the head to wind. It is used to ride out gales/storms when hoisting sail is dangerous/impossible. It is also used to reduce drift. A sea anchor is easily made by seamen.

ASTROLABE

A navigational instrument used by astrologers and pilots. It is a circular plate, generally made of brass, with 360 degrees marked around its circumference. A rotating sight is mounted in the centre. By suspending the astrolabe vertically, an observer can measure the altitude of a heavenly body above the horizon. By holding the instrument horizontally, a bearing (qv) of some object relative to the observer may be taken. The instrument is inaccurate in rough seas. It can cost as much as 300d.

BEACH

Good shelving beaches, suitable for landing boats or larger vessels are often required. Most ports have good beaches nearby, but these are often charged for or jealously guarded by local fishermen. The nature of beaches in a coastal hex may be randomly determined and noted by the GM as necessary. Roll 1d10:

1-2 No Beach 3-5 Fair Beach 6+ Good Beach

Pindas can land on *Fair* or *Good* beaches. Larger vessels require *Good* beaches. *No Beach* indicates the coast does not permit any safe landings.

BEACON

The typical beacon is a brightly painted tower, perhaps manned with a pyre and bell. Manned beacons are expensive to operate and tend to be limited to larger ports. Only major ports keep them burning all night; vessels normally enter/leave a port during daylight hours, unless it would be dangerous to wait outside the harbour. Some ports have buoys marking submarine hazards outside the harbour. False beacons may be erected by wreckers (qv).

BEARING

The angle between the line of true north and the object of the bearing.

BEAT

To sail to windward with a series of alternating close-hauled tacks. Beating requires lots of sea-room and, except in small boats, is not practical in narrow waterways such as rivers or fjords.

BILGE

The lowest interior part of the hull, where water collects, and from where bailing is normally done. There is usually some water in the bilges since no vessel is completely tight, but excessive bilgewater can dangerously affect the vessel's stability. When the bilges overflow, damage to cargo may occur. The bilge may be open or covered by an Orlop Deck.

BILGE KEEL

Longitudinal projections on either side of the main keel to support the hull when resting on the bottom and to provide additional stability.

BOAT

Any small, deckless craft propelled by oars and/or a small sail, also called skiffs or dinghies. The Pinda, a small ship's boat is a common craft of this type.

BOOTY

A windfall such as might be obtained by finding treasure, taking goods by piracy, etc. Booty is generally divided among the whole crew according to the shares they hold. Everyone, however, receives at least one share, and extra shares are often awarded to individuals who have played a major role in the booty's aquisition.

BORE

A rapid, sudden and sometimes dangerous tidal wave that flows upstream in some river estuaries just after low tide. The effect is most prominent in narrow, shallow reaches where constriction causes the incoming tide to rise rapidly. Bores of three to six feet are common. Extreme bores can reach ten feet.

BREAKER

A wave which breaks over a beach, shoal, or rocks; a useful warning of danger.

BREAKWATER

A wall built around or within a harbour to reduce the force of the sea.

BURTHEN

The carrying capacity of a vessel, measured in tuns. Gross Burthen is Length x Beam x Depth, divided by 100. Net Burthen is cargo capacity after allowances for space devoted to crew, provisions and miscellaneous storage.

GLOSSARY

CABLE

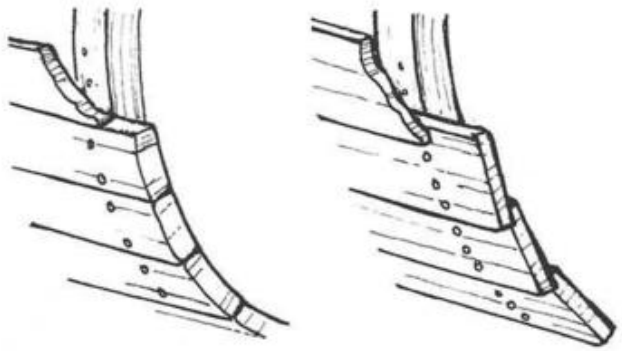
(1) A rope over 3" in diameter. (2) A measure of distance equal to 100 fathoms (600 feet) so named because this is the common length of an anchor cable.

CAREEN

To heel a vessel to one side to clean, caulk, or repair the underwater hull. This may be accomplished by moving ballast and/or cargo, or by pulling the vessel to port or starboard with blocks and tackles fixed to the shore. A beach suitable for careening a vessel is called a *careenage*.

CARVEL, Straking

A method of hull construction used throughout the Venarian Sea, The carvel hull has flush strakes fastened by nails or hardwood dowels to a pre-built rigid framework of keel and ribs. Hulls can be larger because the strakes need not be continuous, and a heavier framework is possible. Carvel hulls are also cheaper; require less skill to build and use less wood.



Carvel Clinker

CLINKER, Straking

The predominant method of hull construction in Harn, Ivinia, and Shorkyne. The clinker hull consists of overlapping, full-length strakes, fastened to stern and stem posts and to each other. Light ribs and deck beams are added after the hull is planked. A clinker hull is sturdier than a carvel hull, but because the strakes are continuous from stem to stern it is difficult and expensive, to build hulls over 100 feet in length.

CLOSE-HAULED

A vessel is close-hauled when she is sailing as near to the wind as she can. Square-riggers can sail about 70° to the wind; mixed-riggers about 55°; and venyn-riggers about 40°.

COMPASS

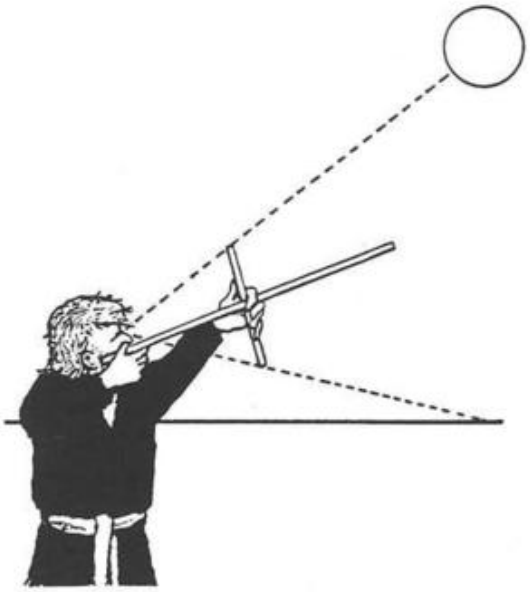
A navigational aid which is slowly replacing the cruder lodestone. It generally consists of a magnetized needle mounted on a brass pivot and a brass disk inscribed with points of the compass. The mechanism is contained within a brass case and is placed in front of the helmsman inside a wooden housing known as a binnacle. A good compass can cost 1000d.

CORD

A rope less than an inch in diameter. Such ropes are known as cordage.

CROSS-STAFF

A navigational aid, the most accurate device of its kind,. probably invented in Karejia and now used widely by pilots throughout western Lythia. The cross staff consists of a square rod, approximately three feet in length. Each of the rod's four faces are engraved with a different scale of degrees. Four short cross-pieces of different length are used, depending on the size of angle that is to be measured. Each cross-piece is designed for one of the four scales. The observer points the rod roughly midway between the object of the sight and the horizon, and moves the cross-piece until it exactly fits between them. He then reads the altitude from the appropriate scale.



The device has several advantages over the astrolabe and quadrant. It is easier to use on a rolling and pitching vessel, and the observer is not forced to sight directly on a bright sun. Cross-Staffs cost 200-300d, but many are inscribed and handsomely inlaid and this can run the price up to 1500d or more.

GLOSSARY

DEAD-RECKONING

Navigation by estimation of course and speed in the absence of landmarks. Pilots use various methods to accomplish this, including a log to determine speed, and a compass, lodestone, or sunstone to estimate direction steered. Experience is a key factor in the accuracy of dead-reckoning; the effects of wind and wave, tides and currents, and the normal sailing characteristics of the vessel must all be considered.

DUMB VESSEL

A vessel without means of self-propulsion. Hence, a sailing vessel which has been demasted in a storm is a dumb vessel, and a barge that is only capable of being towed, is a dumb barge.

FORECASTLE

The raised deck at the bow of some vessels which has evolved from a fighting platform of the same name. The name is commonly shortened to fo'c'sle and pronounced *Fok-sul*. to distinguish it from its predecessor. Seamen are generally quartered in the fo'c'sle or below it in the *forepeak*.

FREEBOARD

The distance from the gunwale to the waterline, or the vessel depth minus its current draft.

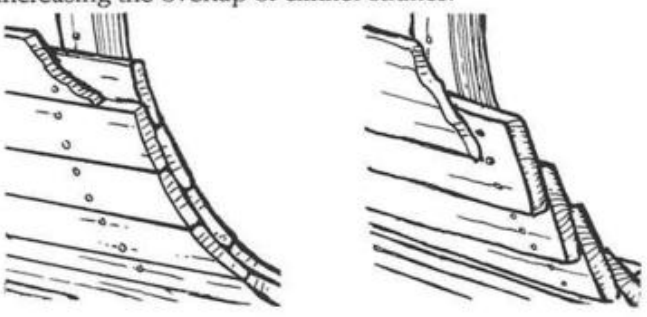
HARBOURMASTER

A shore-based official responsible for the operation and maintenance of a port. Harbourmasters must also have an extensive knowledge of local hazards to navigation. Vessels of non-local registry must hire the harbourmaster to provide piloting services when entering and leaving a port, and pay a piloting fee for this service. For vessels of local registry, this is optional, but always wise if the pilot on board is not familiar with the local waters.

The harbourmaster also collects and accounts for piloting, wharfage, anchorage, and vessel registry fees. Most harbourmasters are semi-retired masters of the Pilots' Guild. In some ports the harbourmaster is a political appointee with minimal maritime skills, but such men hire master pilots to aid them in their duties.

KAMBA, Straking

The practice of significantly improving hull strength by either, double layering carvel strakes, or increasing the overlap of clinker strakes.



KEDGING

A method of moving the vessel when no other movement is being made. The vessel's bottom anchor is loaded into a boat, rowed ahead of the vessel, dropped, and hauled in, thereby moving the vessel forward. Normally, two anchors are employed, one to hold the vessel in position (especially important in a current), the other to kedge. This activity is handled by a crew routine; see CREW 8.

KEEL

The main fore and aft timber of the hull to which the stem, sternpost, and ribs are attached.

LATITUDE

The position north or south of the equator, measured in degrees. One degree of latitude on Kethira is equal to 25 leagues (62.5 miles). A pilot may calculate his latitude by taking a sight of the sun, moon, or stars. The horizontal grid lines on regional maps are at intervals of one degree of latitude.

LEAD, The

A lead weight on a twenty or thirty fathom line used to determine water depth. Using the lead is referred to as *taking soundings*. The line is marked at fathom intervals with a combination of knots and coloured flags in a code understood by seamen. The lead is used when navigating shallow water.

The bottom of the lead weight usually has a depression into which tallow is placed. The nature of the sea-bed (sand, gravel, mud, etc.) can then be determined from particles that adhere to the tallow. This is important in anchoring (a sandy bottom is best) and as an aid to navigation because pilots record the nature of sea-beds at specific locations.

A deep sea lead, essentially a larger weight with 100 fathom line, is also carried on most vessels. Pilots use the deep sea lead to sound for the 100 fathom line, which they consider a crucial warning of an approaching coast. A vessel in water shallow enough to use the deep sea lead is said to be *in soundings*.

LEE

A place where vessels are protected from the full force of the wind. These include inland rivers and lakes, leeward coasts, sheltered bays, and most ports. The effect of a lee is discussed on PILOT 4.

LEEWARD

The opposite of windward, ie. the direction toward which the wind is blowing. The term is also used to indicate a general direction downwind, breakers to leeward, etc. Confusingly, the term leeward coast may be a coast downwind of the vessel, or a coast downwind of a landmass that may be upwind of the vessel. This depends on whether the reference point is the vessel or the landmass.

GLOSSARY

LEEWAY

The drifting of a vessel to leeward of her steered course, caused by the force of the wind acting on her hull, etc.

LIBERTY CHEST

A trunk in which seafarers store personal trade goods. Liberty chests are usually provided by the vessel to each crewmember. The number of chests available is negotiatable as one of the terms of employment, and varies according to the position filled aboard. The normal allowances are given on the Maritime Income Table (CREW 3). The contents of liberty chests are subject to hawking and bonding taxes, and where applicable dutiable, but are often overlooked. Despite the fact that seamen must (legally) deal only with mercantylers, they can become wealthy by astute trading.

LODESTONE

A magnetic stone used as a crude compass. Slivers of lodestone, suspended from a cord, or floated atop a small piece of wood in a water jar, seek magnetic north. The lodestone is most commonly used by Ivinian seaman. Also see: Compass.

LOG

A float attached to a rope that is knotted at regular intervals of 15 fathoms. When the log is cast overboard, a count of passing knots over one minute of time will give a reckoning of the vessel's speed, noted as so many knots. This is a measure of speed commonly used by pilots; 2.5 knots is the equivalent of one league per hour.

LOG, Book

A watch by watch record of weather, estimated vessel course, speed and position. Keeping the log current is the responsibility of whoever is in command at the time. It belongs with the ship and is the property of the owner(s). Pilots always, and captains sometimes, keep their own records (see Rutter).

LONGITUDE

The position east or west of a prime meridian, measured in degrees. Pilots are unable to accurately calculate longitude, and in any event, no prime meridian exists. Most pilots note their positions as so many leagues east or west of a known reference. On most regional maps, most meridians are curves; see Lythia Module.

MAGNETIC NORTH

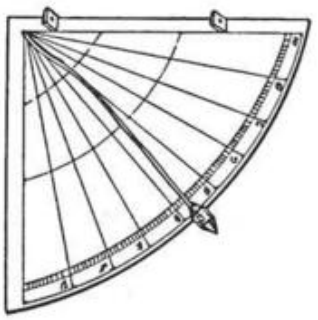
The direction in which a compass or lodestone will point. The magnetic pole is not located at the true pole and varies with fluctuations in the planetary magnetic field. The difference is termed the *variation*. and must be applied to a course or bearing to achieve a true course or bearing. This is presumed to be taken into account by pilots and may be ignored.

NORTH STAR (See Zexus)

PORT

The left side of a vessel facing towards the bow. The name derives from the fact that vessels generally tie up to a wharf on this side to prevent damage to the steering-board (qv). Some mariners refer to this side of a vessel as *Larboard*.

QUADRANT



A navigational aid consisting of a quarter circle of wood/metal marked out in degrees. It is held vertically and the observer sights on a heavenly body whose altitude above the horizon is then indicated by the plumb line. Nearly all pilots possess quadrants, but they are not as accurate as the astrolabe or cross-staff. Quadrants can be easily made by a skilled carpenter or metalsmith and range in price from 50-100d.

QUARTER

The aft section of a vessel's hull, always sub-divided into Port Quarter and Starboard Quarter. These terms are also used as general relative directions. For a vessel steering north, "breakers on the starboard quarter" would bear southeast, on the port quarter, they would bear southwest. If bearing south the breakers would be "astern".

QUARTERDECK

A raised deck at the stern of some vessels which has evolved from the Sterncastle. If a vessel has a quarterdeck, the pilot and other officers will keep watch here. Officer and passenger cabins are usually located below the quarterdeck.

REEFS

Any submarine or tidal rocks which are hazardous to shipping. Major reefs are shown on the regional maps. Minor reefs are presumed to occur in most coastal hexes. A Grounding Roll is required when a vessel enters any hex containing a reef.

RUTTER

A personal and private compendium of facts, courses, charts and other data, kept by each pilot in his own style. Pilots may keep rutters in any form, containing whatever they desire or deem pertinent. Many pilots encrypt their contents to preserve secrecy. A substantial reward is given for any lost rutter turned into the guild. Only pilots are allowed to own rutters.

GLOSSARY

SAILS

Sails are produced by shipwrights and may be purchased at most shipyards. They are sewn by hand from flax canvas or reinforced linen. There are two major sail designs employed, the Square-Rig and Venyn-Rig. These are described under their own headings.

SQUARE RIG

A large square sail bent on a horizontal yard. The square-rigged vessel is most common in northern waters around Harn, Ivinia, and Shorkyne. The design will not allow a vessel to sail much closer to the wind than seventy-two degrees. This severely limits her windward movement, but the design requires less manpower to handle and is superior to the Venyn-Rig (qv) for downwind sailing.

STARBOARD

The right side of a vessel facing towards the bow. The name derives from Steering-Board (qv). The term is also used to indicate a general direction; hence "land-ho on the starboard bow", meaning (for a vessel steering north) land bearing northeast.

STEERING-BOARD

A steering oar, usually deployed over the starboard quarter of a vessel. Some vessels have twin steering oars, the second being mounted on the port quarter. This arrangement gives more efficient steering when a vessel heels to port, but neither arrangement is as efficient as a rudder.

STERNCASTLE

A temporary raised platform at the stern of a vessel installed for combat purposes. Some ship designs expand the structure into a permanent quarterdeck.

SUNSTONE

A navigational aid used mainly by Ivinian pilots. Sunstone is the common name for calcite cordierite, a yellow quartz that changes to dark blue when held at approximately ninety degrees to the sun. With this aid, mariners can determine the rough position of the sun when the sky is overcast or foggy. In these conditions, the sunstone is an invaluable aid to navigation.

TIDES

Tides are of great significance to pilots. Many ports and anchorages have shallows or tidal currents that hinder passage at various times, and moving upriver against a strong ebb tide may be impossible on some rivers. Pilots will sometimes have to wait for favorable tides.

Duration: Because Kethirans use lunar calendars, and Yael (the moon) is the dominant influence on tides, the times of high and low water at any one location are conveniently regular. Highwater occurs twice daily all over Kethira, each twelve hours apart. Low tide occurs six hours after each high tide. In any one place the times of these events will be the same each day, but they vary by location.

Range: The height difference between high and low water marks varies by day and location. In northern ports, those bordering the Haonic Ocean, the Gulf of Ederwyn or the Seas of Ivae and Itikir, the tidal range averages fifteen feet, although it actually varies between twelve (neap tide) and eighteen feet (spring tide) in a monthly cycle. Ports deep within the Venarian Sea have an average tidal range of five feet, but vary from three to seven feet. The transitional ports in Trierzon and Northern Hepekeria have tidal ranges averaging ten feet, varying between seven and thirteen feet. The GM may use the average range at all times, or allow for the monthly cycle at his discretion. Spring tides (highest range) occur twice each month, at Yaelmor (new moon) and Yaelah (full moon). Neap tides (lowest range) occur roughly mid-way between these dates, that is approximately on the 8th and 24th of each month

Ebb & Flood: The water flow created by changes in the tide creates tidal currents. Tidal currents may hinder or assist vessels entering or leaving ports, or navigating rivers. They are also significant in narrow waterways, but may be ignored out of sight of land.

After low and before high water the tide is flooding; from high to low water it is ebbing. Flood tides move generally west-east or south-north and upriver. Ebb tides move generally east-west or north-south and downriver. Ebb tides on rivers are stronger because of the normal flow of the river. Conversely, flood tides on rivers are weaker. A river may be tidal for as many as 30 leagues (6 hexes) inland.

Roughly an hour before and after high and low waters, tidal currents are minor and are referred to as *slack*. The time of maximum tidal current is generally half way between high and low water.

The strength of tidal currents depends on tidal range; the greater the range the stronger the current. Terrain is also significant; narrow waterways mean stronger currents. Consequently, tidal currents are especially significant in the narrow waterways of Ivinia. For tidal information at specific locations, see the Port Almanac.

TUN

The unit of measure of a vessel's burthen or tunnage. The name is derived from a large wine barrel; hence, the number of tuns of wine that she could carry. For practical purposes, most authorities deem the tunnage/burthen of a vessel to be the product of her length times beam times depth divided by 100.

GLOSSARY

VENYN-RIG

A triangular sail bent on a long, sloping yard. A venyn-rigged vessel can sail to within about forty degrees of the wind, compared with about seventy two degrees for a square-rigged vessel. Hence, this rig is better for sailing close to the wind. However, tacking or wearing is more difficult than on square-riggers; the lower end of the sloping yard must be pulled down, forced behind and around the mast, and then played out on the opposite, lee side. The Venyn-Rig is less efficient for downwind sailing because of the fore and aft line of the sail.

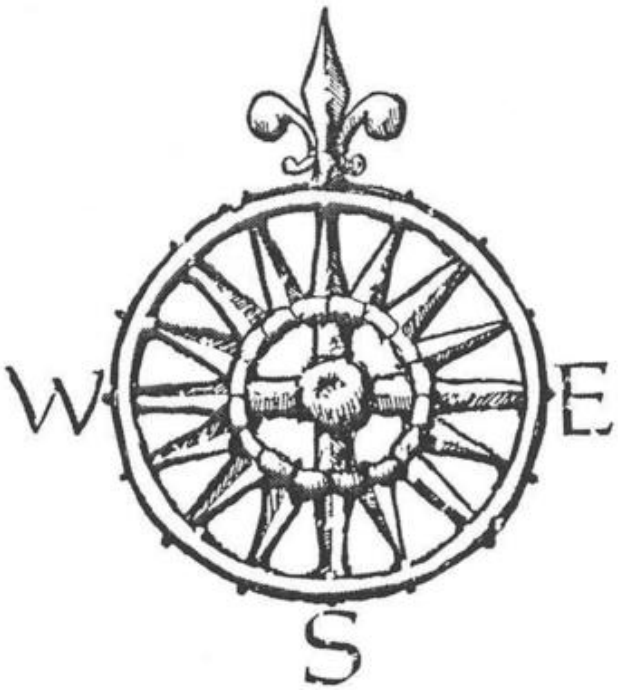
The venyn design is the most common rig in the Venarian Sea, and this seems to be the origin of its name. A mixed-rigger combines one or more square-rigged masts with a single venyn-rigged mizzen. This arrangement allows the venyn sail to assist the pilot with steering.

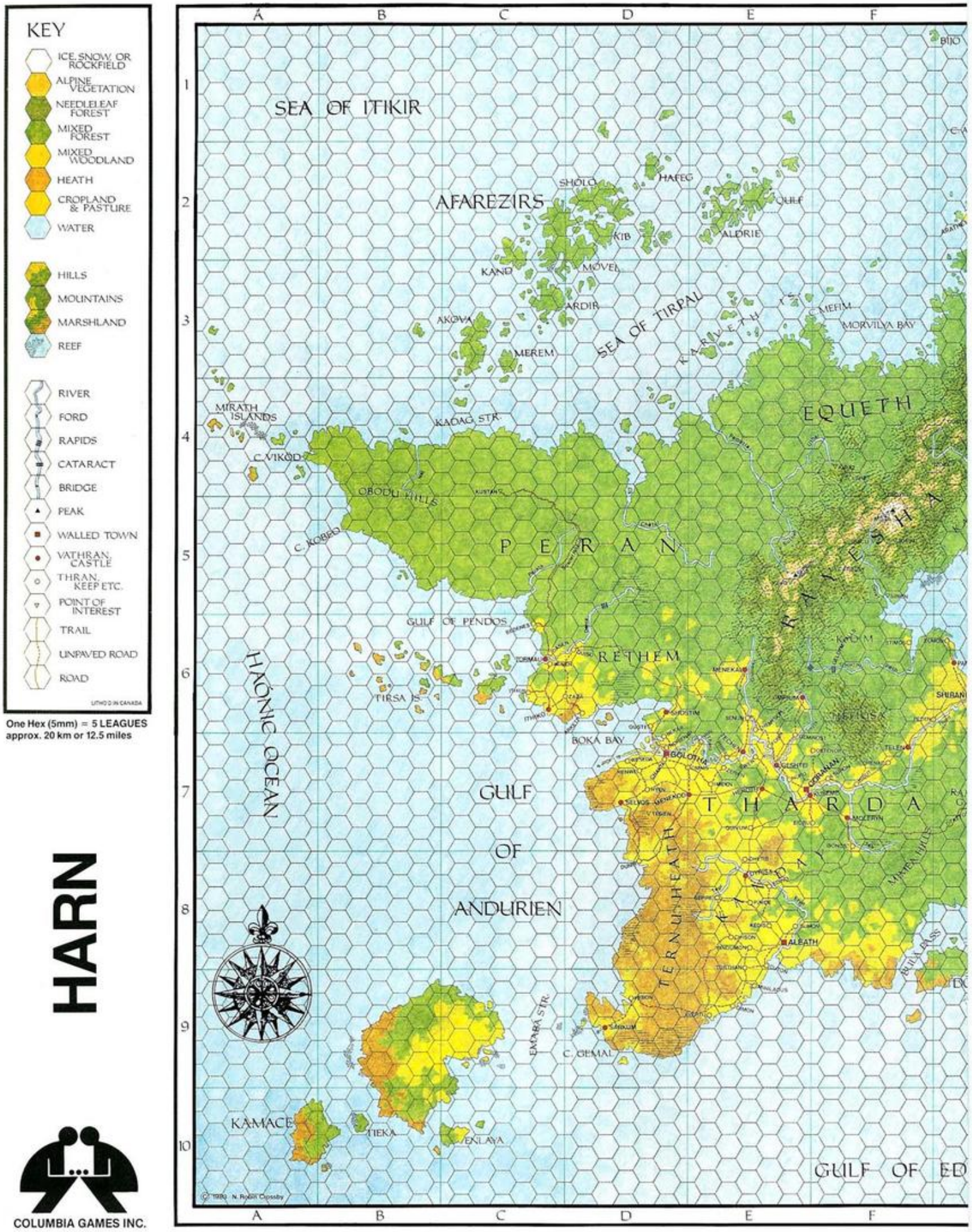
WRECKERS

Wreckers are a phenomenon despised by seafarers, but common throughout much of Lythia. Whenever an isolated village is situated on a hazardous coastline, the villagers may turn to wrecking as an income supplement. Wreckers erect false beacons or move navigational markers thereby causing vessels to run aground. The villagers then appear on the scene to recover whatever may be salvaged, with appropriate expressions of sympathy for any survivors. This kind of activity is illegal, but hard to prove. Besides, it is usually foreigners, unfamiliar with the local waters, who get "rescued".

ZEXUS

The north star, located in the constellation of Geriam (the bow). The mast of the constellation of Lado (the galley) points to Zexus. This bright star is a invaluable aid to pilots.




KEY
ICE, SNOW, OR ROCKFIELD
ALPINE VEGETATION
NEEDLELEAF FOREST
MIXED FOREST
MIXED WOODLAND
HEATH
CROPLAND & PASTURE
WATER
HILLS
MOUNTAINS
MARSHLAND
REEF
RIVER
FORD
RAPIDS
CATARACT
BRIDGE
PEAK
WALLED TOWN
VATHRAN CASTLE
THRAN KEEP ETC.
POINT OF INTEREST
TRAIL
UNPAVED ROAD
ROAD
LITHO'D IN CANADA
One Hex (5mm) = 5 LEAGUES
approx. 20 km or 12.5 miles
HARN
COLUMBIA GAMES INC.
SEA OF ITIKIR
AFAREZIRS
SHOLO
HAFEG
GULF
KIB
ALORIE
KAND
MOVEL
ARDIR
AKOVA
MEREM
SEA OF TIRPAU
KARVETH
C. MEFIM
MORVILYA BAY
EQUETH
MIRATH ISLANDS
KADAG STR.
C. VIKOD
OBODU HILLS
C. KORED
PERAN
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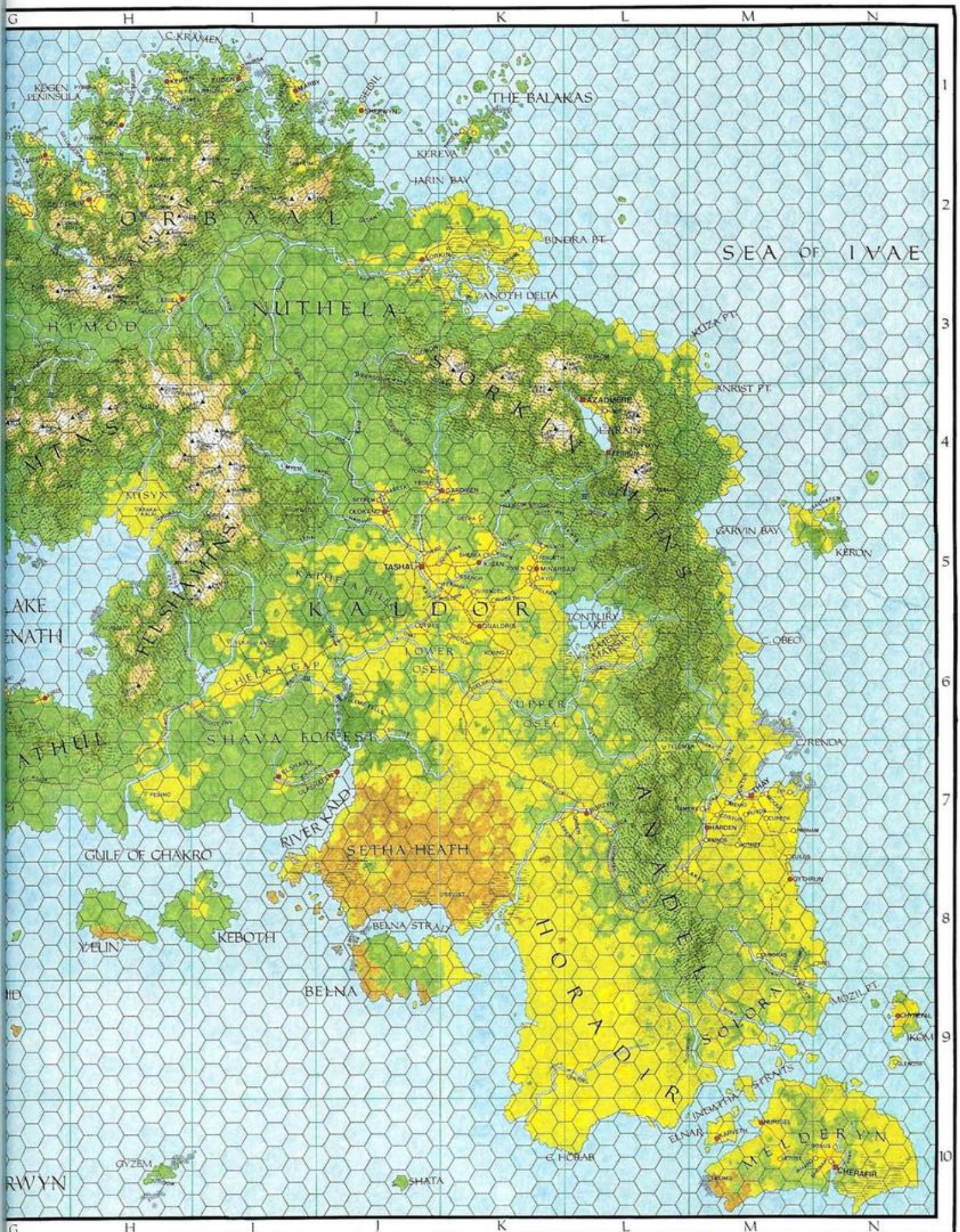
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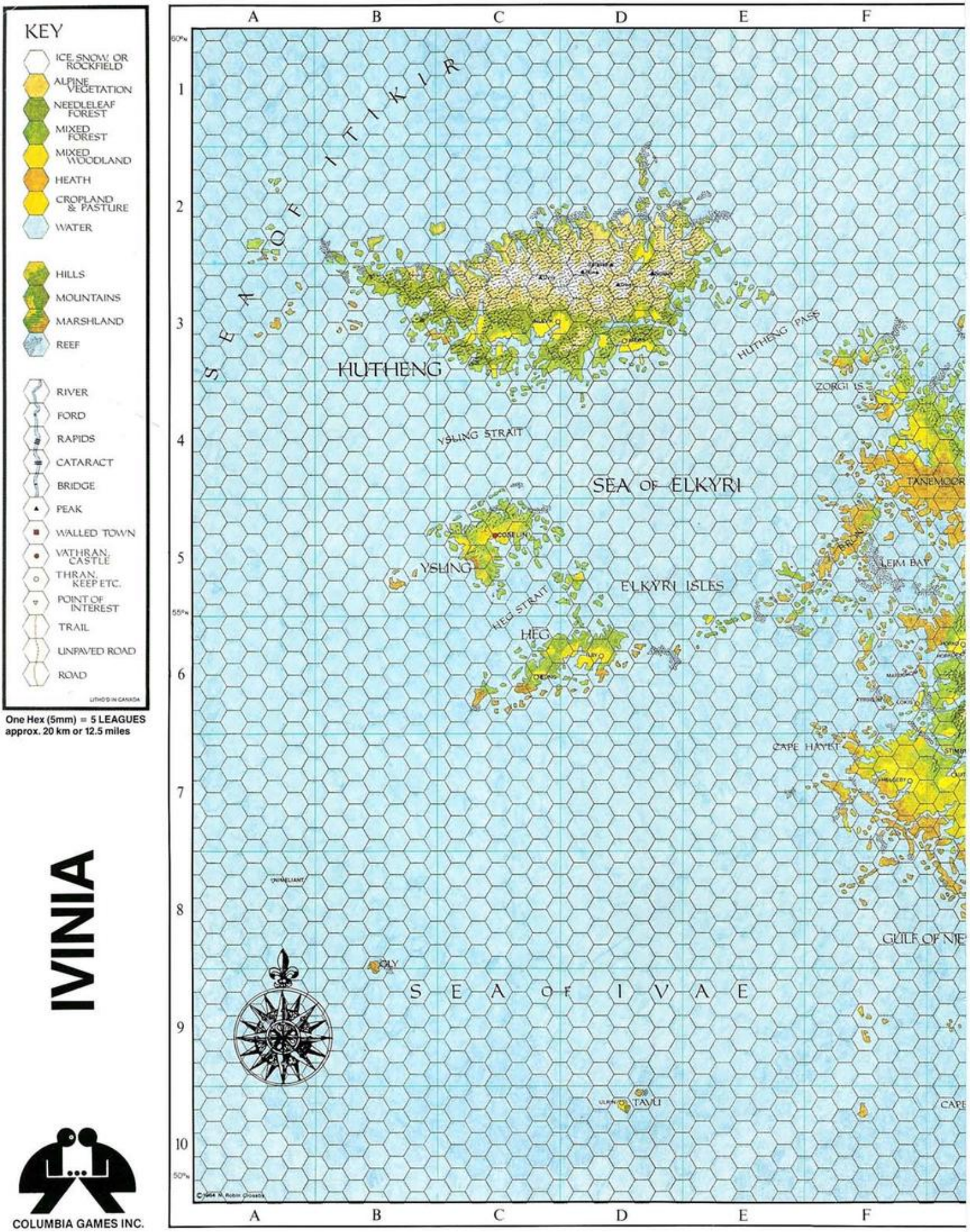
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THRAN KEEP ETC.
POINT OF INTEREST
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UNPAVED ROAD
ROAD
LITHO'D IN CANADA
One Hex (5mm) = 5 LEAGUES
approx. 20 km or 12.5 miles
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COLUMBIA GAMES INC.
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55°N
50°N
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LEIM BAY
ELKYRI ISLES
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CAPE HAYLET
GULF OF NI
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S E A O F I V A E
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CAPE
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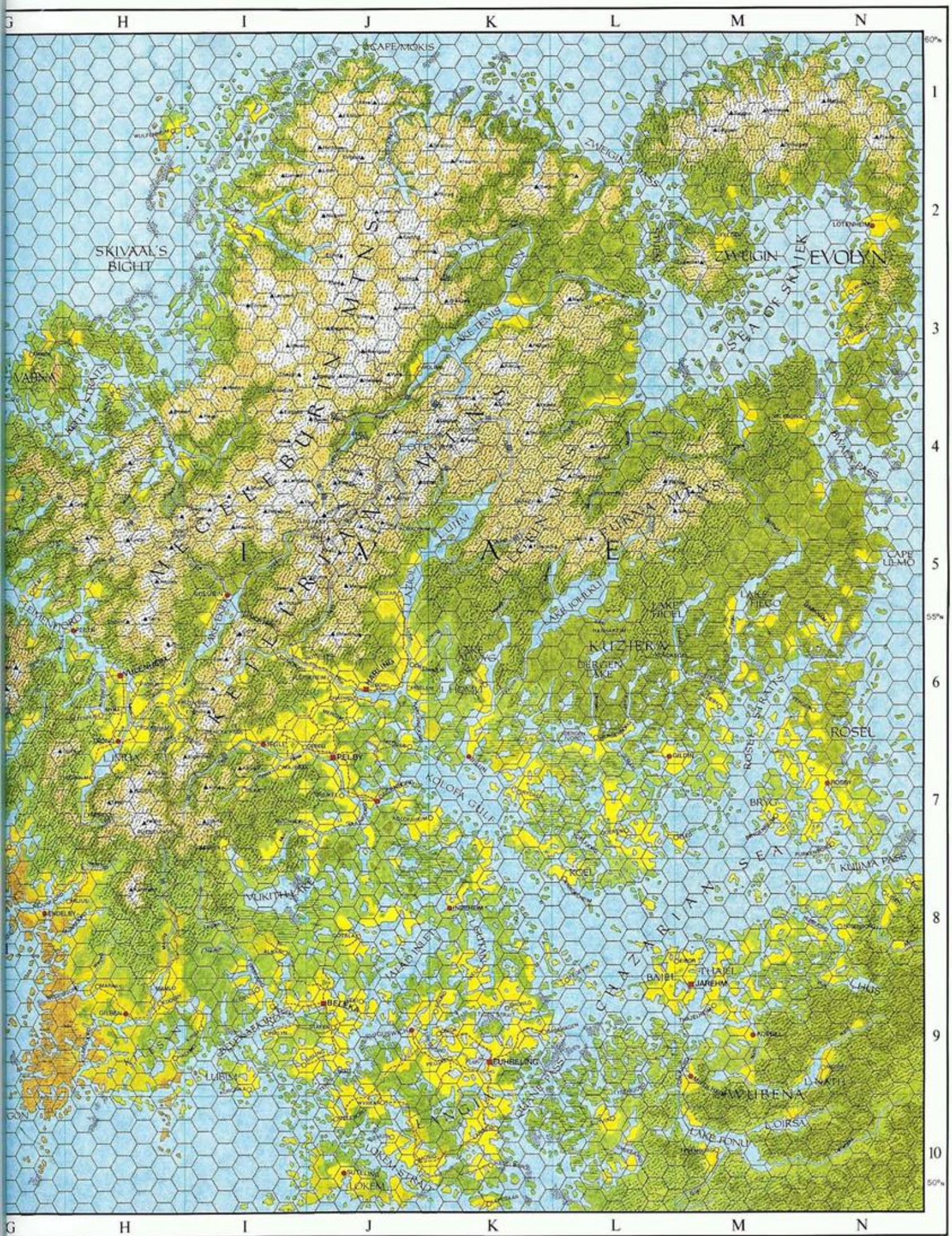
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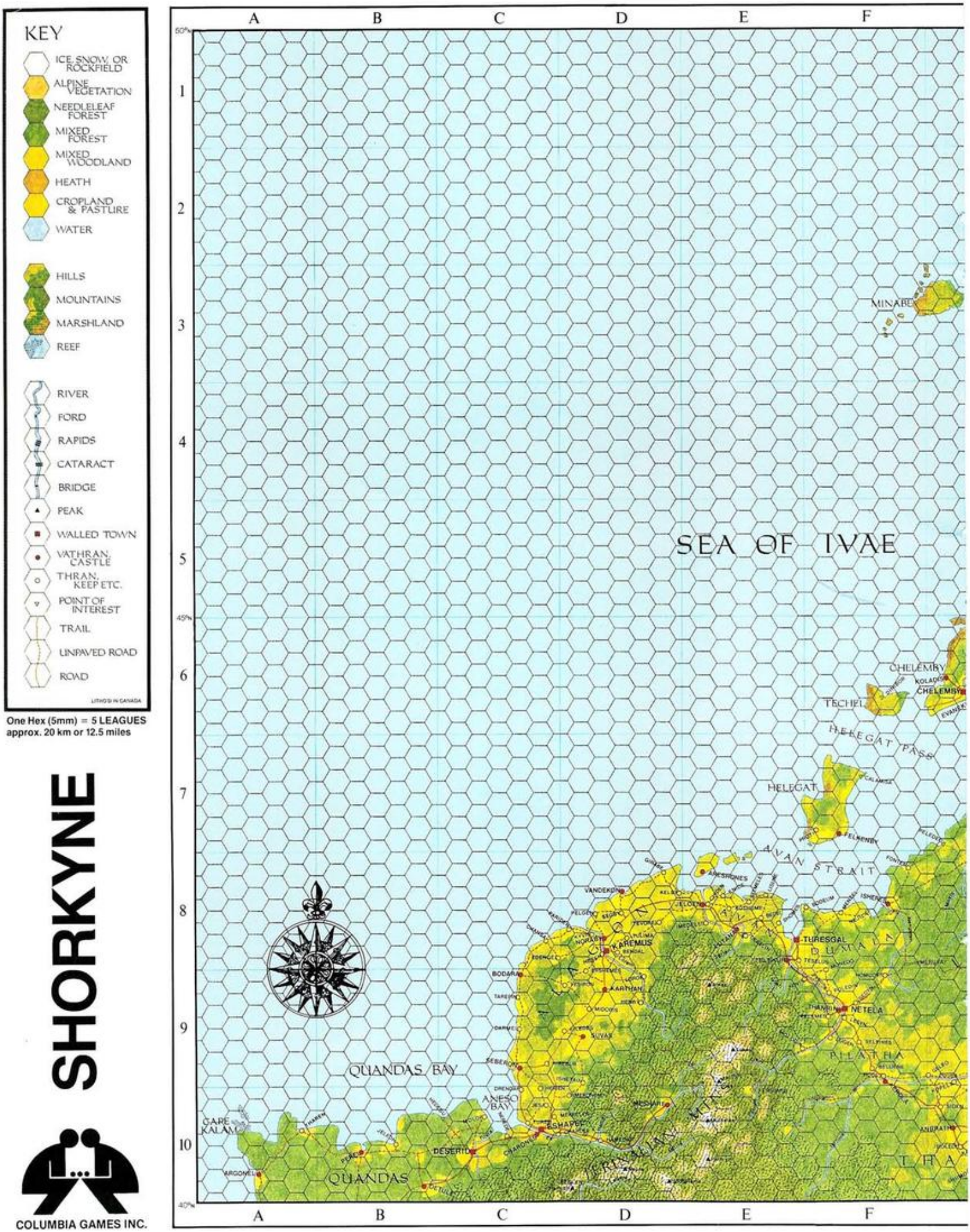

One Hex (5mm) = 5 LEAGUES
approx. 20 km or 12.5 miles

SHORKYNE

COLUMBIA GAMES INC.

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GULF OF HARBAAL
GULF OF SHORKYNE
HURISEA
CHALEO HILLS
ELGOS PASS
GLIDE
BLOOS
GENJA
ANSTAL
MEFRE
PEDON BAY
KEREON
IFANE
BERGHEIM
LEDEN
WARKENHEIM
BELDIRA
ESLOR
KOLARE
DEMATH BAY
RAGORA
ELVIRA
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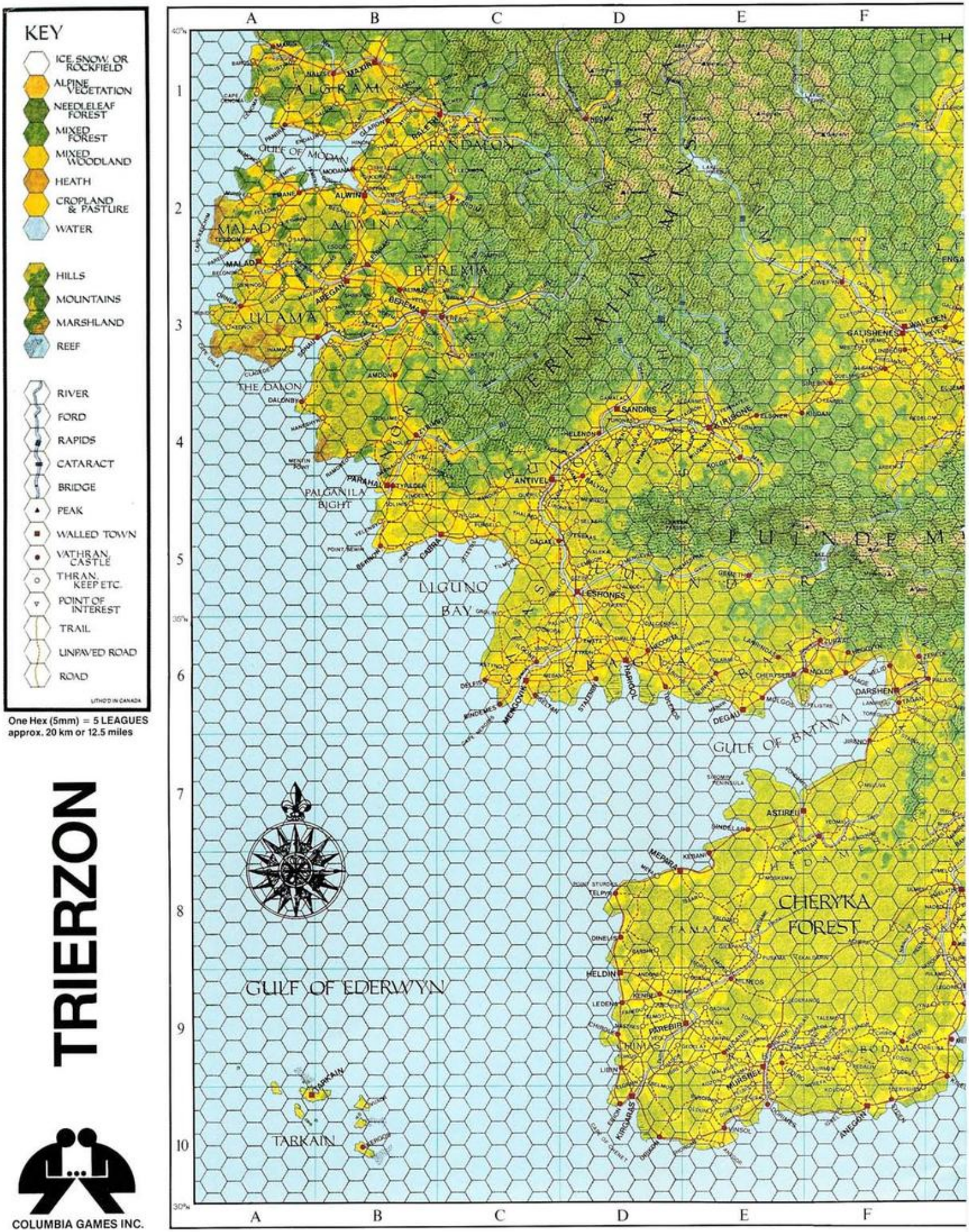
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POINT OF INTEREST
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COLUMBIA GAMES INC.
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ALGRAM
HANDALON
GULF OF MODAN
MALADOR
ALWINA
BEREMA
ULAMA
THE DALON
PALGANILA BIGHT
LIGUNO BAY
GULF OF EDERWYN
TARKAIN
GULF OF BATANA
CHERYKA FOREST
ASTIRELI
MEDARA
HELDIN
SANDRIS
ANTIVEL
LESHONES
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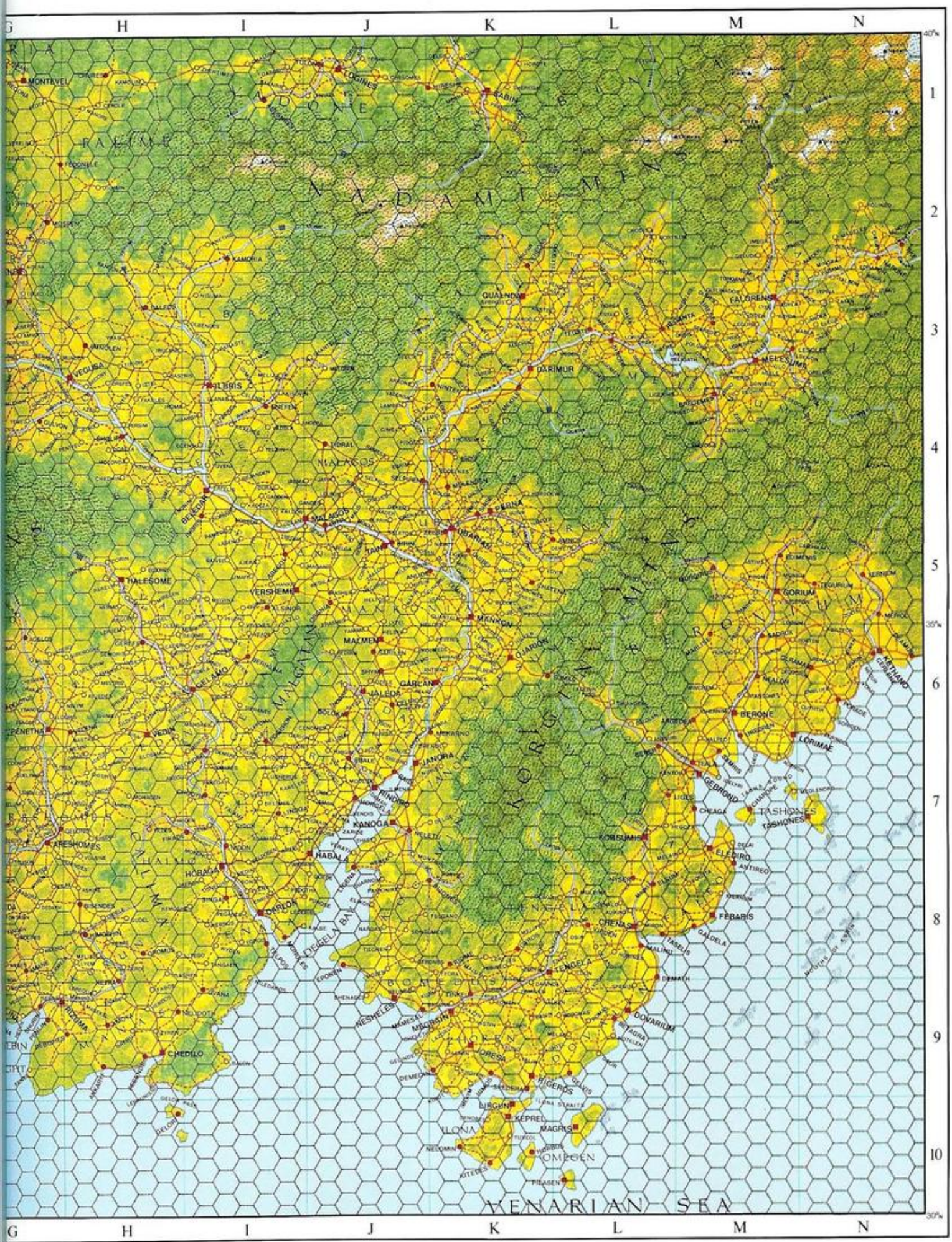
GALISHENE
ALDEN


G H I J K L M N
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MONTEVEL
LOGINES
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HIGEROS
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OMEGEN
PISAEN
VENARIAN SEA

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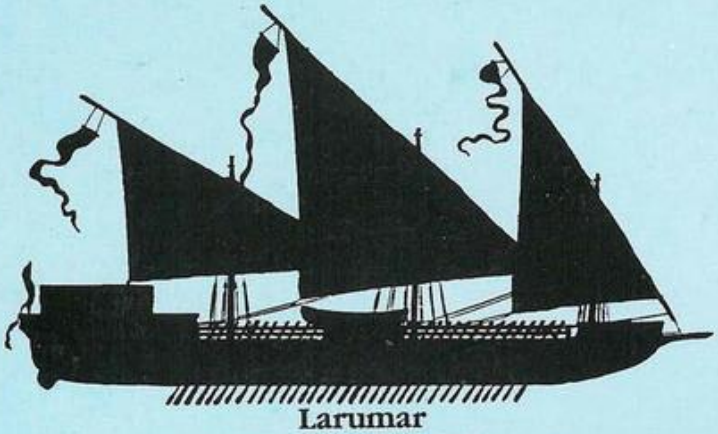
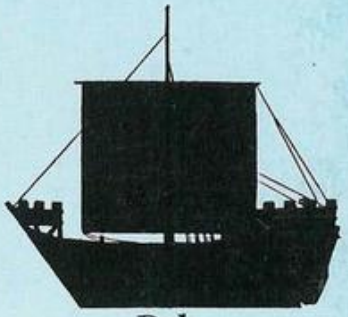
Maritime & Piloting Rules



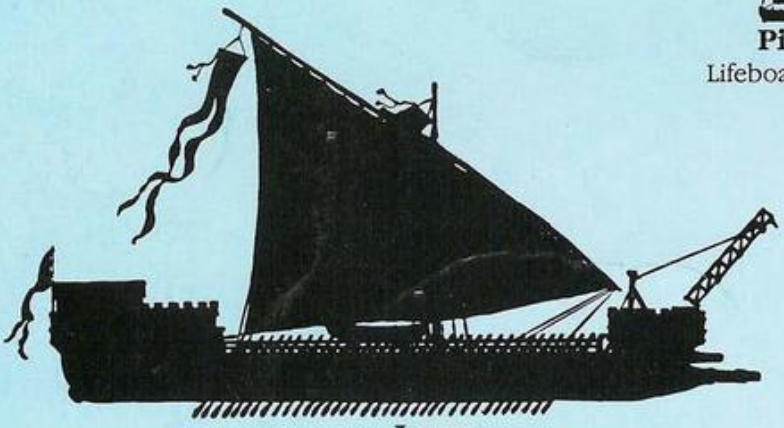
Larumar
Karejian Merchant Galley

Venar
Azeryani Merchantman

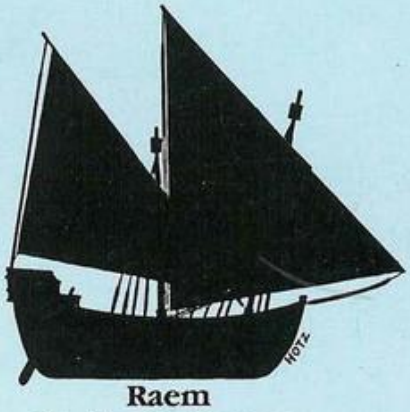


Dak
Shorkyne Cog

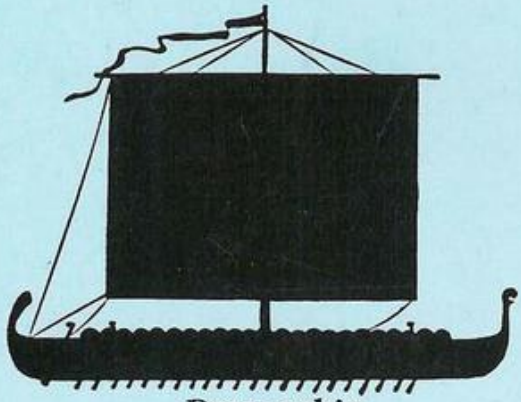
Pinda
Lifeboat, Dinghy



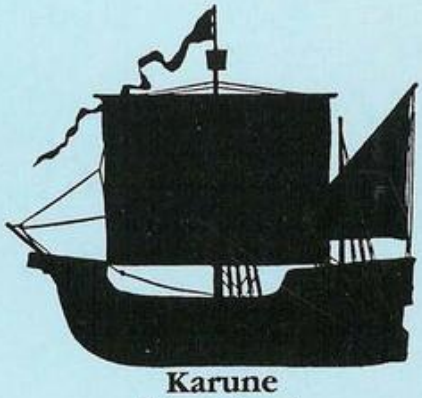
Laru
Azeryani War Galley



Raem
Karejian Merchantman



Dragonship
Ivinian Warship



Karune
Trierzi Carrack

Talbar
River/Canal Boat

Nivik
Harnic/Ivinian Knarr

Scale in Feet*

0 10 20 50 75 100

*Vessel Sizes Can Vary

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